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GENERAL STUDIES (TEST CODE : 2087)

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Medium Eng./Hindi	ENGLISH	Registration Number	154025
Center	ONLINE/ Delhi	Date	26/8/23

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
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17	15	
18	15	
19	15	
20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न–पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **HINDI & ENGLISH.**
   इसमें बीस प्रश्न हैं **हिन्दी और अंग्रेजी** में छपे हैं।
3. **All questions are compulsory.**
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

Is student recommended for One-to-One mentoring?

Recommended	Strongly Recommended

EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

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1. भारत में पशुपालन में महिलाएं किस प्रकार योगदान देती हैं? भारत में पशुधन क्षेत्रक में महिलाओं को वर्तमान में किन समस्याओं का सामना करना पड़ रहा है?

How do women contribute to livestock rearing in India? What are the issues currently faced by women in the livestock sector in India? (Answer in 150 words) 10

Livestock rearing is a supporting activity to agriculture in rural areas wherein cows, buffaloes, sheep, goats are reared for economic benefits.

Livestock rearing has been practised almost since man started to lead a settled life.

Contribution of women to livestock rearing :—

1. Collection of fodder, grasses and eating / feeding items for animals.
2. Collection of Milk (Milking)
3. Maintenance, cleaning and care of animals.
4. Utilisation of Dung for fuel, gobar gas, and other domestic purposes.
5. Grazing of small ruminants when male members are involved in prime occupation of agriculture.

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Issues currently faced :-

1. Lack of High quality breed of animals.
2. Unpaid work not counted.
3. Women not involved in managerial decision making with regard to rearing.
4. Prevailing patriarchial norms prevent women from upper caste to get involved in rearing.

Way forward :-

1. Investments in Research & Development to get new breeds
2. Promoting women led cooperatives for Milk on model of AMUL.
3. Recognising the economic potential of women.

Women participation in livestock sector is crucial for rural empowerment and enhancing farm incomes hence efforts to be made for more involvement of women in critical sector of livestock.

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2. वन नेशन वन राशन कार्ड (ONORC) योजना कैसे और किस सीमा तक प्रवासी मजदूरों, शहरी गरीबों और दिहाड़ी मजदूरों के लिए उल्लेखनीय संभावित लाभ प्रदान कर सकती है?

How and to what extent can the One Nation One Ration Card (ONORC) scheme provide significant potential benefits for migrant labourers, urban poor, and daily wagers? (Answer in 150 words) 10

One Nation one Ration card is the ambitious scheme wherein one Ration card would be enough to avail subsidised food grains from any part of the country irrespective of nativity/domicile.

Salient Features.

- Linking with Aadhar.
- Split coverage. e.g. one member can receive in one state, while rest family members can receive at their home/village.
- Pan India Portability.

Potential benefits

① Availment of entitlement based food at the place of migration generally migrant labourer and poor daily wage earner earlier were not able to use the PDS ration, which now they would be able.

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(2) ensuring food security to all.
(3) promotes health and well being of large chunk of our labour population.
(4) with increased rural distress and fragmentation of land holdings people are migrating to urban areas; now they can migrate without fear of losing out on government scheme and benefit.
(5) promotes social justice and goal of SDG of zero hunger.

Challenges — All states have not implemented.
— Lack of Aadhar or proper legal documents with migrants.
— Bureaucratic hurdles, corruption in system.

ONORC is a revolutionising step in ensuring goal of zero hunger and promotion of well being of migrant labours. It should be implemented strictly in right respect

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3. जलवायु परिवर्तन ने भारत में कृषि उत्पादन और उत्पादकता को कैसे प्रभावित किया है? क्या आपको लगता है कि जलवायु स्मार्ट जल बचत कृषि-प्रौद्योगिकियां समय की मांग बन गई हैं?

How has climate change affected agricultural production and productivity in India? Do you think climate smart water saving agri-technologies have become the need of the hour? (Answer in 150 words) 10

Climate change is the long term Phenomenon of change of weather Pattern of an area.

Climate change affected agricultural Production & Productivity :-

1. Shift in crops and cropping Pattern
2. Frequent droughts and flash floods
3. Delay in onset of Monsoon and early withdrawal leads to large scale losses in Agricultural Production.
4. The recent incidence of locust invasion attributed to climate change.
5. Many water sensitive crops like Rice and temperature sensitive crop like wheat would undergo a considerable change in area.

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Climate smart water technologies is need of the hour.
Some of the examples are :-

1. Drip irrigation
2. sprinkler irrigation
3. Rain water harvesting
4. construction of farm ponds, checkdams, percolation pits are needed on priority.
5. smart farming - sensor based irrigation

How does these methods help :-

- Drip and sprinkler irrigation coupled with smart sensors helps in identifying critical stress period and can schedule irrigation accordingly.
- The water harvesting structures like Rain water harvesting - farm ponds help in conserving water for stress full period as well as checks erosion due to flooding.

Climate change is a reality and agriculture is our priority hence sufficient investments and popularization of smart water technologies is need of the hour.

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4. संधारणीय फसल उत्पादन के लिए नैनो-उर्वरकों के आर्थिक और पर्यावरणीय लाभ क्या हैं? भारतीय किसानों द्वारा नैनो-उर्वरकों को अपनाने में आने वाली समस्याओं का उल्लेख कीजिए।

What are the economic and environmental benefits of nanofertilizers for sustainable crop production? State the concerns in the adoption of nanofertilizers by Indian farmers. (Answer in 150 words) 10

Nano Fertilisers are the new generation Fertilisers which have been produced using nano-Technology and modification of molecules at nano-scale.

IFFCO a leading fertiliser company has developed Nano-urea and Nano-DAP.

Economic benefits.

- Saves Foreign exchange as we are dependent on imports for phosphatic & Potastic fertilisers.
- Reduction in cost of cultivation as input prices would fall down. Leading to more returns and increasing of farmers income.
- Earn through Patenting technology and supplying to other countries.

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Environmental benefits

1. Less application of Nitrogenous Fertilisers and phosphatic fertilisers would lead to less leaching and less pollution of soil & water.
2. Minimum quantity is applied, hence toxicity would be less for crops.
3. Promotes sustainable Agriculture and non-interference in natural agro ecology.

Concerns in adoption by Farmers

1. Lack of technical know how.
2. Pricing is also a concern.
3. Traditional mindset (Not able to switch to new product.
4. Lack of credible data on effect of productivity.

Nano Fertilisers have dual benefit of saving environment and saving money as it is indigenously developed; Proper extension and outreach must be done to enhance its popularity in farming community.

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5. देश के सभी हिस्सों में प्राकृतिक गैस के पर्याप्त और समान वितरण की उपलब्धता एक समान आर्थिक एवं सामाजिक प्रगति हासिल करने में कैसे मदद कर सकती है? इस संदर्भ में भारत को किन चुनौतियों का सामना करना पड़ रहा है?

How can the availability of adequate and equitable distribution of natural gas in all parts of the country help in achieving uniform economic and social progress? What challenges India faces in this regard? (Answer in 150 words) 10

Natural gas is the fuel which can be used for powering vehicles, factories as well as for domestic consumption (cooking gas - CNG/PNG)

Uniform economic & social progress

① Many parts (especially eastern and North eastern parts) have less supply of CNG & PNG

② Gas is cost effective than petrol & diesel. It is also less polluting as it burns without residue.

③ Gas can be used to power vehicles and generate electricity which has been a challenge in underdeveloped hinterlands.

④ It will promote clean cooking fuel replacing firewood which is economic as well as environmental friendly.

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Currently gas based economy is more in Western and Northern parts so development is skewed.

Challenges

1. Dependent on imports.
2. Lack of pipelines to transport gas.
3. Most gas producing countries are in West coast and laying pipelines to North east and east entails cost which might make it unfeasible and costly.
4. International issues like US sanctions and Ukraine Russia war.

Way forward :-

1. Implementing PM Uja Ganga yojana at fast speed.
2. exploring internal resources like KG Basin
3. exploring option of coal bed methane.

Gas based economy can fuel holistic and sustainable development balancing growth throughout geography hence it must be promoted.

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6. भारत में बढ़ते मानव-वन्यजीव संघर्ष के कारणों की व्याख्या कीजिए। मानव-वन्यजीव संघर्ष को कम करने के लिए सरकार द्वारा किए गए उपायों पर चर्चा कीजिए।

Explain the reasons behind increasing human-wildlife conflict in India. Discuss the measures taken by the Government to mitigate the human-wildlife conflict. (Answer in 150 words) 10

Human-wildlife conflict refers to the entry of wild animals (Tigers, elephants) into the human habitations and ensuing conflict out of this.

Reasons for Human-wildlife conflict

1. Increased urbanisation and development leading to Forest depletion.
2. Expanding agriculture into the adjoining Forest areas.
3. Construction of new road projects and Railway lines which encroach Forest lands.
4. Increased Rural distress leading people to venture into Forest in search of Timber and other Forest resource.
   e.g. Sundarbans, Assam, Sonitpur.
5. Increased economic activities as of mining and exploring for natural resources.

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Measures taken :-

1. Sensitizing rural communities.
2. Increased patrolling by Forest-Guards and officials.
3. Implementing innovative ideas like solar fencing of Forest-villages and Pied-Bee where in Honey Bees used to distract away elephants.
4. Construction of safe underbridges and migration corridors.

Way forward :-

1. Proper implementation of Forest Rights Act
2. Environment Impact Assessment
3. involving Gram Sabha in wildlife management plan
4. Demarcation of Eco sensitive zones and buffer zones.

Human wildlife conflict leads to loss of valuable ~~and~~ human and animal life and creates animosity towards animal conservation; Steps like that of Sonitpur model and innovative steps must be taken to stop human wildlife conflict.

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7. भारत में बढ़ते शहरीकरण और ध्वनि प्रदूषण के बीच संबंधों पर चर्चा कीजिए। मानव स्वास्थ्य पर ध्वनि प्रदूषण के प्रभावों का वर्णन कीजिए।

Discuss the linkages between growing urbanization and noise pollution in India. Describe the effects of noise pollution on human health. (Answer in 150 words) 10

Noise pollution refers to the pollution through noise when it crosses above 40 decibel and other threshold limit prescribed.

How Growing urbanisation leads to noise pollution?

1. construction activity and use of heavy machineries like earth moving equipments.
2. Increased amount of vehicular traffic.
3. Increased amount of Factories and industries. Which generate noise.
4. urbanisation leads to demand for electricity which is met through diesel generators and other power producing equipments.
5. use of Modern machineries like crushing plants, mobile towers also contribute to noise pollution.

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Effect of Noise Pollution on human health :-

1. Increased Mental stress.
2. leading to instances of High Blood pressure and cardio diseases.
3. Mental fatigue and diseases.
4. Many instances leading to person being deaf as well.
5. Breaks the serenity and impacts school children and elderly and disturbs peace.

Way forward :-

1. Putting Green zones like planting trees.
2. Implementing Noise reducing devices.
3. Promoting NO Honking zones
4. Putting time limit (like non-operation during night hours for economic activities)

Noise Pollution causes mental and shock disorders and also reduces liveability of cities. It should be tackled through multi pronged approach as mentioned above.

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8. भारतीय अंतरिक्ष नीति, 2023 भारत में एक सशक्त, नवाचारी और विश्व स्तर पर प्रतिस्पर्धी अंतरिक्ष पारितंत्र के विकास के लिए एक उत्प्रेरक के रूप में कैसे कार्य कर सकती है?

How can the Indian Space Policy, 2023 act as a catalyst for the development of a robust, innovative and globally competitive space ecosystem in India? (Answer in 150 words) 10

Indian space policy 2023 is a comprehensive policy released by government for development of innovative and competitive space ecosystem in the country.

Need of policy :-

India's space programme is growing leaps and bounds and to expand and maximize potential benefits it was needed.

How will it act as catalyst for development of space ecosystem

1. Involvement of private sector
2. Producing spillover technologies like fuel cell, energy efficiency and peaceful uses of space.
3. To earn foreign exchange revenues by launching satellites for many countries.

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(4) promote and position India as a space superpower.

(5) It would promote thorough research and development to improve the economy and life of Indian citizens.

The Indian space programme has come a long way since establishment of INCOSPAR in 1962 to establishment of ISRO, Antrix, New space India Limited. As they say sky is the limit, India must utilise its capacity of providing cost-effective space solutions to the world and in this regard space policy was revisited and is a welcome step.

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9. स्पेशल फ्रंटियर फोर्स के अधिदेश पर चर्चा कीजिए। भारत की सुरक्षा सुनिश्चित करने में इसकी क्या उपलब्धियां रही हैं?

Discuss the mandate of the Special Frontier Force. What have been its achievements in ensuring the security of India? (Answer in 150 words) 10

Special Frontier Force (SFF), have been raised in the aftermath of Sino Indian war of 1962. It consists of Tibetan refugees and Gorkha soldiers.

Mandate :-

→ To carryout operations along the LAC (Line of Actual Control) and prevent Chinese intrusion into our territories.

→ They are deployed for quick and swift response in case of emergencies.

→ In the recent Indo-China stand off along the LAC, SFF were deployed.

Achievements of SFF in ensuring security of India :-

① They were highly useful in operation Eagle

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(Indo-Pak, 1971 war in Chittagong Hill tracts)

- Useful in operation Meghdoot of capturing Siachen glacier.
- They helped in flushing out Militants during the operation Rhinoceros (1984)
- During operation Vijay (1999) Kargil war, they were used.

SFF are specially trained for high altitude mountain warfare and they have done well given the opportunities.

SFF needs better training and modernisation inorder to deliver the best in critical LAC with China.

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10. समुद्री सुरक्षा सुनिश्चित करना भारत के रणनीतिक और आर्थिक हितों की सुरक्षा का मूलभूत आधार क्यों माना जाता है? इस संदर्भ में समुद्री जलदस्युता रोधी अधिनियम (मेरीटाइम एंटी-पायरेसी एक्ट) का क्या महत्व है?

Why is ensuring maritime security considered the key to safeguarding India's strategic and economic well-being? What is the significance of the Maritime Anti-Piracy Act in this regard? (Answer in 150 words) 10

Maritime security refers to ensuring security along the vast 7500 km long coastline as well as defending and protecting the EEZ (Exclusive Economic zone of our country).

Need of Maritime security

Strategic reasons

1. Possibility of infiltration as was in the case of 26/11 attacks.
2. Crisis in Myanmar, Srilanka and Pakistan creates a potential of illegal migration.
3. Rising influence of ISIS in region like Srilanka Bombing and Maldives.
4. Growing influence of China in Indian Ocean Region (IOR).
5. Aspiration of India to be a net security provider in IOR.
6. Drugs and Trafficking are rampant-

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Economic reasons

- Protecting our fishermen
- Protecting and defending the critical sea lanes of communication.
- Majority of India's trade carried out through Indian Ocean Region.
- Prevalence of piracy in the Horn of Africa region.

Maritime Anti piracy Act needed :-

- Would ensure proper security to merchant vessels.
- In line with India's vision of SAGAR.
- Increasing role of India in the Indian Ocean Region.
- Threat of piracy emanating from Horn of Africa region (Somalia region).

Securing the seas would ensure peace and economic prosperity of our country and establish India as a major regional power and Maritime Piracy Act is a step in right direction.

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11. 2023-24 के बजट में सूचीबद्ध सात प्राथमिकता वाले क्षेत्र (सप्तर्षि) कौन-से हैं? उनसे किस प्रकार भारत में समावेशी विकास को बढ़ावा देने की अपेक्षा की गई है?

What are the seven priority areas (the Saptarishis) listed in the Budget of 2023-24? How are they expected to promote inclusive development in India? (Answer in 250 words) 15

Saptarishi were the 7 ancient sages of Indian civilisation whose philosophies and ideals set the path for growth and development of our country. In the similar manner the union budget (2023-24) highlighted & listed the 7 principles called as saptarishi for the economic development of our country. The 7 principles are:-

1. Inclusive development
2. Infrastructure development and investment
3. Promoting Green Growth
4. Ensuring last mile connectivity.
5. Unleashing the potential
6. Unleashing the power of youth.
7. Financial sector reforms.

These 7 principles forms the core philosophy in guiding India towards path of sustainable and economic development.

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How will they promote inclusive development :—

(1) Inclusive development means the development encompassing the benefit of economic growth for all the sections of population.

(2) Infrastructure & inclusive development
— Infrastructure creates spillovers in terms of job generation and economic prosperity and balances out regional imbalances.
(i.e.g. Holistic development of hilly and NE states).

(3) Green growth - Sustainable green growth itself is all encompassing and focus on green energy would ensure energy security and sustainable solution to all.

(4) Unleashing the potential by reducing regulatory hurdles in form of labour laws and compliances.

(5) Unleashing power of youth by skill development

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education and training to facilitate employment and capacity building.

(6) Financial sector reforms to ensure that financial inclusion in form of bank accounts and insurance products reaches to all sections of people.

(7) Ensuring last mile connectivity in line with vision of Antyodaya and Sarvodaya, so that the remotest of remote corners are connected with the mainline of development.

The Saptarishi principles are a great initiative which is encompassing all the sectors of economy and would ensure equitable, fair, inclusive and sustainable development to the poorest of poor and remotest of remote population. It will help India achieve the goal of 5 trillion USD economy.

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12. ब्लॉकचेन तकनीक भारत में भूमि रिकॉर्ड के डिजिटलीकरण की दिशा में कैसे महत्वपूर्ण भूमिका निभा सकती है?

How can blockchain technology play a pivotal role towards digitization of land records in India? (Answer in 250 words) 15

Blockchain is the technology which works on the principle of distributed ledger system; wherein no single user controls the data and the data are distributed across the Internet, where all users can access.

Blockchain technology has been thought of as a breakthrough technology which can have widespread applications and digitization of land records is one of them.

How Blockchain can help in digitization of land records

1. prevents fraudulent transaction
2. Duplicacy and redundancy of data would be minimised
3. cost effective solution to the problem of digitization
4. will solve the problem of long pending

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litigations in case of land disputes.

(5) can help in better targeting of Agriculture schemes like PM-KISAN and Direct Benefit transfers. Many inclusion and exclusion errors can be ruled out.

Challenges

(1) Lack of digital literacy in the rural areas.

(2) problems of digital divide

(3) Coordination amongst states and with centre as land is a state subject.

(4) Threat of cybersecurity and chances of misuse.

Way forward

- Block chain technology training can be imparted to state government and Panchayat functionaries.
- promotion of digital literacy

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and increased penetration of the Fibre optics and Internet connection

(3) establishing coordination and cooperation amongst stake holders will improve the use of block chain technology.

Block chain is a revolutionary technology which can act as panacea to the longstanding problem of digitization of land record. It can accelerate the digitization and help in decentralisation and more democratic use of land record data, making it accessible to common public as well as government. however the challenges may be addressed before fully exploiting its potential.

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(इस भाग में कुछ ना लिखें)

13. सार्वजनिक-निजी भागीदारी (PPPs) भारत में कृषि उपज के भंडारण, परिवहन और विपणन को बेहतर बनाने में कितनी सहायक हो सकती है?

How far can public-private partnerships (PPPs) help in improving the storage, transportation, and marketing of agricultural produce in India? (Answer in 250 words) 15

India is one of the leading producers in Agricultural commodities like Milk, Pulses, cereals, Fruits and vegetables; But the losses both at Harvest and post harvest stages hampers the prospect of utilising this vast potential.

Public private partnership refers to collaboration between public and private sector to ensure the delivery of intended services.

Challenges in Agricultural Produce

Wide scale of challenge ranging from storage, transportation and marketing because of prevailing bottlenecks in form of coordination and archaic laws.

How can PPP ensure in improving Agriculture sector at various points :-

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(इस भाग में कुछ ना लिखें)

Storage – Large scale warehouses and cold storages can be constructed in rural areas.

It has advantages
- prevents spoilage
- Avoids distress sale.
- Helps earn remunerative price.

How collaboration can occur.

Govt can provide land at cheaper price and private sector can build infrastructure, which government alone could not have done. (Finance issues)

Transportation :– Another sector where maximum losses occur.

Transportation can ensure
- Perishable items reach on time.
- Avoid spoilage.
- Reduce cost of transportation to Mandis.

How the collaboration can work
- Govt to build Road infrastructure through Gram Sadak yojana

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and private sector to intervene through innovative transport solution like
- Refrigerated vans for horticulture produce.
- containers for milk transportation
- innovative packaging solutions (corrugated boxes, etc).

Marketing - Most challenging aspect as it is facing severe bottlenecks.

Marketing would ensure
- Better remuneration
- Avoids distress sale
- Higher income.

How can P-P-P work

Govt can facilitate Marketing through establishing Mandis and Gramin Hats.
- Promoting e-NAM
- Contract farming
- Removing stockholding limits.

P-P-P has ensured credible success in road infrastructure, it has got potential to transform agriculture sector if implemented and guided well; efforts to be sincerely made to leverage this.

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14. सार्वजनिक वितरण प्रणाली में प्रौद्योगिकी के माध्यम से आधुनिकीकरण और सुधार योजना (SMART-PDS) में भारत हेतु खाद्य सुरक्षा से परे जाते हुए वृहद् परिवर्तनकारी क्षमता विद्यमान है। विवेचना कीजिए।

The Scheme for Modernization and Reforms through Technology in Public Distribution System (SMART-PDS) has transformative potential beyond food security for India. Discuss. (Answer in 250 words) 15

PDS (Public Distribution System) is the national system for ensuring distribution of Food and Ration to the needy people through a mechanism of Fair Price Shops.

There were lot of bottlenecks and challenges in PDS system hence there were call of reforms which is being implemented through SMART-PDS.

Modernization and Reforms through Technology has been targeted in the PDS.

In addition to ensuring the Food security to entitled beneficiaries there are huge benefits they are as follows:-

① Checks pilferage and diversions. Use of GPS to monitor diversion of Trucks.

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(2) Identifies and removes ghost-beneficiaries by linking through Aadhar number.

(3) Proper dissemination of timely information regarding arrival of food grains to general public.

(4) Transparency will be improved as online tracking of stocks and distribution can be tailed.

The potential of SMART PDS goes beyond food security, here we can see :-

(1) Ensures social justice.

(2) Removes Exclusion and Inclusion error.

(3) Actual position of stocks can be known, so that excess can be sold in the market to avoid food spoilage and losses. This would lead to enhanced income.

(4) promotes corruption free, Responsible governance.

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(5) Rural distress and issues of Malnutrition and hidden hunger can be addressed.

(6) Diversion of stocks for non productive uses like alcohol making and smuggling to neighbouring countries can be avoided.

(7) It will ensure that the benefits intended are reaching last mile and to the right User.

The SMART PDS was a long pending due for revamp of critical service like Food security provision the spinover effects of this would be in enhanced income, better earning through exports and fair and inclusive development hence SMART PDS has potential way beyond food security.

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15. समुद्री हीटवेव की उत्पति के लिए उत्तरदायी कारणों की व्याख्या कीजिए। उन तरीकों पर चर्चा कीजिए जिनसे वे समुद्री पारितंत्र को प्रभावित कर सकती हैं और आर्थिक नुकसान पहुंचा सकती हैं।

Explain the causes behind the occurrence of marine heat waves. Discuss the ways in which they can affect the marine ecosystems and cause economic losses. (Answer in 250 words) 15

Marine heat waves refers to the condition of extreme warming of the marine ocean/sea surface.

Recent examples — Spain and parts of Europe have been experiencing

Bay of Bengal region also witnessed marine heat waves in recent years.

It is an unusual phenomenon generally linked with climate change and global warming.

Causes :—

1. Global warming
2. Deforestation
3. Increasing pollution due to anthropogenic activities.
4. Rapid infrastructural development in coastal areas.
5. Urban Heat Island effect and concretization are also responsible.
6. Altered ocean current pattern

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Ways in which Marine heat waves (MHW) can affect marine ecosystem

- ① Loss of Biodiversity
  ② Death of beneficial corals and other marine organisms.
  ③ Change in migration pattern of Fishes, Turtles and other marine animals.
  ④ Lead to oxygen depletion and formation of dead zones in Ocean
  ⑤ Reduction in productivity of marine ecosystem.

Economic losses :-

① Will severely impact the livelihood of sea dependent community. (Reduced Fish catch)

② Marine Heat waves can have impact of Regional Weather pattern like Indian Monsoon; thereby impacting Agricultural production

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③ It can lead to increase in incidence of extreme weather events like cyclone.

④ Existence of sea dependent people and coastal communities will be at threat.

⑤ Loss of tourism potential.

Way forward

① Minimising deforestation.

② Alteration to coastal areas and development in coastal zones to be done with caution.

③ Promoting sustainable development.

④ Involving local communities in the planning and development.

The world is witnessing the surge of marine heat waves associated with climate change; strong measures needs to be addressed to the problem of climate change to prevent the problem of marine heat waves as the existence of large number of community is at threat.

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16. ग्लेशियल लेक आउटबर्स्ट फ्लड (GLOFs) के कारणों और प्रभाव की व्याख्या कीजिए। इस संदर्भ में सरकार द्वारा कौन-से उपाय किए गए हैं?

Explain the causes and impact of Glacial Lake Outburst Floods (GLOFs). What are the measures taken by the government in this context? (Answer in 250 words) 15

Glacial lake outburst Floods refers to the outburst of glacial lake due to sudden rise in the volume and carrying capacity of lakes being breached.

ex- Kedarnath Tragedy of 2013 was due to GLOF of Chorabari Lake.

- Recent flash Flood in Chamoli district (2021) due to GLOF in Dhauliganga river.

Causes :-

1. Global warming - Glaciers are melting Fast.
2. Pollution - Leading to accumulation of Black carbon on glaciers.
3. Unplanned construction activities in sensitive areas weakens the lake boundaries
4. Increased and unregulated tourism leading to

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additional pressure for change in the land use pattern.

Impacts

Social
- Death and destruction
- Displacement of people from the hills.

Economic
- Damage to buildings
- Loss of life, livelihood and livestocks.
- Development takes a back stage.
- All the economic progress are undone.
- Roads and Bridges are damaged.
- Loss to infrastructure (Bridge, power plant, schools, Administration buildings)

Political
- Creates refugee and displacement crisis within the country.

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Measures taken by government-

1. Sustainable development promotion.
2. Environment Impact Assessment before carrying out development work.
3. Stationing of NDRF & SDRF to prevent casualties.
4. construction of Dams and embankments
5. Utilizing satellite (GPS, GIS for prediction)

Way forward

1. Involving local community in development process.
2. conducting mock drills and training.
3. Strengthening of infrastructure
4. Monitoring through leveraging data from ISRO, IMD.
5. ensuring coordination between different organs of government machinery both during and before occurence.

GLOF has potential to cause widespread losses as witnessed in Uttarakhand; proper care must be taken to prevent the occurence of such events in future.

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17. रेडियोमेट्रिक डेटिंग कैसे काम करती है? इससे जुड़ी सीमाएं क्या हैं? रेडियोमेट्रिक डेटिंग में कैल्शियम-41 का उपयोग करने के संभावित लाभ क्या हैं?

How does radiometric dating work? What are the limitations associated with it? What are the potential advantages of using Calcium-41 in radiometric dating? (Answer in 250 words) 15

Radiometric dating is the process of determining the age of old rocks, structures, artefacts, soil and other items.

- Principle of Radiometric dating :-

— It works on the principle of radioactive decay.

- A substance consists of radioactive isotopes of the elements.

We are aware of the half life of every element.

e.g. Carbon 14 it is 5700 years. It takes 5700 years for the initial quantity of Carbon to get halved. Based on the present amount of the element we can precisely calculate the age of given sample.

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(इस भाग में कुछ ना लिखें)

Limitations associated

① Sophisticated technology can't be done at places, it needs dedicated laboratory support.

② Handling of Radioactive material is a challenge.

Calcium-41 radiometric dating potential advantages

① Mainly all the rocks as well as living organisms have the component of calcium in them. (e.g. Teeth, Bones, Rocks etc)

② It has long half life of 99000 years which makes it useful.

③ C_{14} the most commonly used radiometric dating has half life of 5700 years hence not used for organisms/samples older than 50,000 years.

④ Calcium 41 can be

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Used for wide range of dating which was limited with C_{14}.

Way forward :-

Calcium 41 dating technique can be used to estimate the cosmic events (samples from Moons, Mars etc) and has potential to unleash new field in paleontological studies.

Calcium 41 is the modern advancement - it needs to be exploited in more scientific manner to get the desired benefits.

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18. सरकार द्वारा डिजिटल स्वास्थ्य पर बल दिए जाने के बावजूद भारत में ई-फार्मेसी के संदर्भ में चिंता क्यों बढ़ रही है? इस द्वंद्व के समाधान के लिए क्या उपाय किए जाने चाहिए?

Why is there a growing concern over e-pharmacy in India despite the government's push for digital health? What measures are needed to resolve this dichotomy? (Answer in 250 words) 15

e-pharmacy is the process and system of getting the pharmaceuticals (medicine drugs) through electronic web portals and mobile applications.

e.g. Tata 1mg, Pharmeasy, netmeds etc.

Growing concern over e-pharmacy

1. problem of misuse of certain drugs.
2. Over the counter sale of drugs would be increased
3. Problems associated with self medication.
4. our country already suffering from quacks and e-pharmacy would further embolden the problem of wrong and fake products.

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(5) Quality of the drugs cannot be ensured.

(6) Potential of misuse of many drugs like Anti depressants or sleeping pills for suicide and other wrong reasons.

(7) Lack of digital literacy.

Even though government is promoting e-health but the above mentioned problems are creating a classical case of dichotomy.

Some of the measures needed to resolve the issue

— (1) Regulation through e-pharmacy bill as proposed.

(2) Defining SOP for e-pharmacy companies.

(3) Strict implementation of rules through monitoring and checking and having e-health regulatory authority.

(4) Proper sensitization and awareness through information education campaigns.

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(इस भाग में कुछ ना लिखें)

(5) proper penal provisions for the defaulters of the e-pharmacy norms.

(6) Mechanism for online grievance redressal.

On one hand we are promoting e-health, but the challenges associated with e-pharmaceuticals needs to be addressed as this issue is a pressing one which concerns health of all; hence e-pharmaceutical market need to be well guided, controlled and regulated to follow the best practices.

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19. भारत में वामपंथी उग्रवाद (LWE) में हुई कमी में किन कारकों ने योगदान दिया है? क्या आपको लगता है कि यह कमी निकट भविष्य में LWE की समस्या के संभावित अंत का संकेत देती है?

What factors have contributed to the decline of Left Wing Extremism (LWE) in India? Do you think this decline signifies the likely end of the LWE problem in the near future? (Answer in 250 words) 15

Left wing Extremism (LWE) refers to the extremist and violent activities being carried out by the Maoist-insurgents to subvert the democracy and democratic institutions of the country.

— originated in 1967 in Naxalbari village of West Bengal and spread to almost 10 states of our country.

Factors contributed to decline of LWE in India

* The LWE has declined by 77% when compared to 2009 to (2021). The number of civilian casualities have reduced by almost 85% during the same period.

Some of the factors for decline

① proper implementation of SAMADHAN Doctrine.

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② Improved development in the effected region (Roads, infrastructure, schools, connectivity)

③ proper implementation of welfare schemes like PDS, Food security

④ Skills and livelihood based training for the rural & tribal youth. (ROSHNI scheme)

⑤ Modernisation of defence forces, Police personnel and improved surveillance and intelligence gathering.

⑥ Suitable rehabilitation and surrender policy by state government (Odisha, AP) for the extremists cadres.

⑦ Dedicated operations like
— Operation Greyhound
— Operation Green hunt
→ (Through special Forces)

The decline has been observed in almost all states, and the LWE related incidents are reported mainly

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from the state of Chhatisgarh and occasionally from Jharkhand.

The Decline signifies the likely end to the problem of LWE, but it is time we should not be complacent as it doesn't take much time for the situation to go out of control if the underlying causes are not addressed in toll measure.

Way forward

- Proper implementation of Forest Rights Act, 2006.
- Preventing alienation of Land.
- The main issue of Jal, Jangal, Jameen needs to be prioritized in development perspective.
- More targeted approach & coordination between central & state forces are needed.

To completely eliminate the scourge of LWE, multi pronged approach is the need of the hour.

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20. मनी लॉन्ड्रिंग और कर अपराधों के बीच समानताएं तथा तालमेल होने के बावजूद, कर अपराधों से निपटने के लिए एंटी-मनी लॉन्ड्रिंग (AML) उपायों का प्रयोग राजनीतिक, कानूनी एवं साथ ही परिचालन संबंधी चुनौतियां प्रस्तुत करता है। विवेचना कीजिए।

Despite commonalities and synergies between money laundering and tax crimes, leveraging anti-money laundering (AML) measures for tackling tax crimes presents political, legal as well as operational challenges. Discuss. (Answer in 250 words) 15

Money laundering is the part of organised crime wherein the illegitimately earned money are made to look legitimate.

Tax evasion crimes refers to the process of evading the taxes by using legal loopholes or using the tax havens to avoid paying taxes from the money earnt.

Money laundering leads to creation of Black money which necessitates tax evasion to hide and protect the money; they both are synergistic and complementary.

But leveraging AML (Anti Money Laundering measures) presents challenges :—

Political :—

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① The definition of money laundering needs to be broadened to include tax crimes.

② More often money laundering (ML) and tax crimes crosses the country barriers. Coordination amongst the countries and different agencies is a challenge).
e.g. money laundered through drugs in Afghanistan is stored in tax haven of Panama or Fiji.

Legal Challenges :-

- The law of ML like Benami Transactions Act, or Fugitive Economic Offenders Act doesn't have specific provisions with regard to tax crimes.
- The legal loopholes needs to be plugged as these loopholes are used to evade taxes; e.g. - Base erosion & Profit shifting
  - Double Taxation Avoidance Agreements.

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Operational challenges.

Synchrony between Enforcement Directorate, Directorate of Revenue Intelligence, CBI and Other organisations are lacking. Often the jurisdiction overlaps or sometimes doesn't fall into the purview.

Way forward

1. International collaboration like OECD, G20 (for Base erosion profit shifting, Global Minimum tax) needs to be implemented.
2. DTAA Agreements needs to be strengthened.
3. Increased coordination between agencies like ED, CBI, DRI and Income tax.

Money laundering and tax crimes are huge threat to India's internal security, it needs to be tackled through strong political will backed by proper legal tightening of norms.

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GENERAL STUDIES (TEST CODE : 2091)

Name of Candidate	NITESH KUMAR MISHRA		
Medium Eng./Hindi	ENGLISH	Registration Number	154025
Center	ONLINE/ DELHI	Date	29/8/2023

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
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16	15	
17	15	
18	15	
19	15	
20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न–पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **HINDI & ENGLISH.**
   इसमें बीस प्रश्न हैं **हिन्दी और अंग्रेजी** में छपे हैं।
3. **All questions are compulsory.**
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

Is student recommended for One-to-One mentoring?

Recommended	Strongly Recommended

EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

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1. भारतीय कृषि में जल के अकुशल उपयोग के लिए उत्तरदायी कारण क्या हैं? जल उपयोग दक्षता में सुधार के उपाय सुझाइए। (150 शब्दों में उत्तर दीजिए) 10

What are the reasons behind the inefficient use of water in Indian agriculture? Suggest measures to improve water use efficiency. (Answer in 150 words) 10

Water use efficiency of crops refers to the amount of production (yield) obtained per unit of water applied.

India is primarily an agrarian economy and the inefficient use of water is one of the major reasons for low productivity of agriculture.

Reasons :-

Social
⇒ Lack of literacy, awareness knowledge amongst farmers
⇒ Traditional methods like flooding irrigation is prevalent

Technological
- Lack of extension services.

Economic
- Poor economic conditions doesn't allow them to adopt smart systems like drip irrigation.
- Not growing crops as per climatic and cropping patterns.

Political
- Free electricity provision by state leads to unwanted pumping of ground water.

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Impact of low water use efficiency
- Environmental degradation
- Losses through evaporation & transpiration
- Backwardness of farmers as economic resources are low.
- Pollution & Groundwater depletion
- Loss of forex reserves as petrol & diesel are used to pump water.
- Less per acre yield and poor economic returns.

Measures to improve water use efficiency
- (1) Promoting crops as per geography and climate.
(2) Change in cropping pattern from Rice-sugarcane to Millets, pulses, oilseeds
(3) Using precision irrigation equipments like Drip, sprinkler.
(4) Promoting solar farming (PM-KUSUM)
(5) Irrigation scheduling as per scientific approach.

Water is a scarce and precious natural resource, improved ways to achieve per drop more crop needs to be institutionalised and trained to farmers.

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2. भारत में सार्वजनिक वितरण प्रणाली (PDS) के तहत फूड बास्केट में विविधता लाने के सामाजिक, आर्थिक और पर्यावरणीय लाभ क्या हैं? (150 शब्दों में उत्तर दीजिए) 10

What are the social, economic and environmental benefits of diversifying the food basket under the Public Distribution System (PDS) in India? (Answer in 150 words) 10

Public Distribution System (PDS) is the government scheme and mechanism of providing subsidized foodgrains to the people of country.

— Major food provided under the PDS are - Rice, wheat, pulses and sugar.

Majority under the PDS system the focus has been cereal and carbohydrate based food, but with the rising challenge of Malnutrition and Hidden hunger coupled with Obesity issues there is a need of diversification, to ensure balanced nutrition of people.

The potential benefits under different heads are :—

Social — improved health outcome
- Reduction in Protein Energy Malnutrition
- Improvement in mental, physical and cognitive ability of people.

e.g. More pulses and millets will reduce

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instances of kwashiorkor among children and anaemia among women.

Economic benefits

⇒ The food supplied under PDS will bring a change in cropping pattern – which will bring better return to farmers.

⇒ promotion of healthy crops like millets, fruits, protein based pulses etc.

– improvement in farm income and ultimately help to double the income of farmers.

Environmental benefits

– shift from water guzzling crops like rice, wheat, sugarcane to millets, will help avert water crisis.

– Less of pesticides, fertilizers and chemicals to resistant crops like millets promotes ecological benefits.

– Less disturbance to agro-ecology of the region.

Diversifying the traditional PDS system with new crops can lead to better social outcome, increased return and environmental sustainability.

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3. क्या पशुधन क्षेत्रक को पुनः सक्रिय करना भारत के किसानों की संधारणीय आजीविका और आय में वृद्धि सुनिश्चित करने करने की कुंजी हो सकता है? अपने उत्तर के समर्थन में कारण प्रस्तुत कीजिए। (150 शब्दों में उत्तर दीजिए) 10

Can re-energising the livestock sector be the key to sustainable livelihood and increasing the income of Indian farmers? Give reasons in support of your answer. (Answer in 150 words) 10

Livestock is the rearing of cows, buffaloes, goat and sheep for economic benefits.

Since Green revolution the focus had been on crops and livestock was left behind; but this sector has immense potential to reenergize the income of Indian farmers.

How would it be possible.

1. Livestock promote multitude of economic activity like Milk, meat, biogas and other industries like leather.
2. Potential to supplement income in case of crop failures.
3. Less impacted by climate change hence can be used as shock absorber.
4. More than 50% of women not actively engaged; in the livestock sector they can be helpful.

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(5) Livestock promotes other industries like food processing, Dairying, meat packaging etc; which has potential to generate huge employment

(6) Spillovers impact on food and nutritional security.

AMUL model has successfully explained how women can be successful in livestock rearing.

(7) Removes the problem of disguised unemployment in agriculture as surplus labour can be used.

Livestock sector - key focus

(1) GOBARDHAN scheme for energy security.

(2) GOKUL Mission for promoting indigenous breeds

(3) Natural, organic & zero budget farming has critical inputs from livestock sector.

Livestock sector can contribute to promote livelihoods and generate guaranteed returns; the renewed focus for doubling farmers income should be on livestock sector.

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4. क्या आप इस बात से सहमत हैं कि आर्थिक सुधार के बाद की अवधि में उच्च आर्थिक संवृद्धि के परिणामस्वरूप संवृद्धि का लाभ हाशिए पर मौजूद वर्गों तक नहीं पहुंच पाया है, जिससे समावेशी विकास चिंता का एक प्रमुख विषय बन गया है? अपने उत्तर का औचित्य सिद्ध कीजिए। (150 शब्दों में उत्तर दीजिए) 10

Do you agree that high economic growth in the post-reform period has not resulted in growth trickling down to the marginalised sections, rendering inclusive growth a major concern? Justify your answer. (Answer in 150 words) 10

Inuusive growth is that economic growth which helps in reaching the last mile and envoes growth with equity and equality.

High economic growth post reform period has not been able to benefit to marginalised sections

— As per oxfam report 10 % Indians hold more than 80 % wealth.

— more than 15 % population still under below poverty line.

— There are incidences of hunger related death and all pervative unemployment in countryside.

— High degree of Informalisation of labour and prevailing agrarian & rural distress further substantiates that growth has not been inuusive.

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Wide variations (Regional, and Intra regional) in terms of income has been reported.
Western states like Gujarat, Maharashtra compared with Bihar, Jharkhand.
Amongst state - Maharashtra we can observe intra regional variation (Mumbai region vs Vidarbha region)

Way forward to remove inequalities and promote inclusive growth :—

1. Saptarishi principle of Union budget 2022-23 (inclusive growth and last mile connectivity)
2. 12th Fyp was focussed on inclusive growth.
3. Missions like - Skill development, literacy, stand up india, startup india. to promote inclusive growth.
4. Improvement and targeting achieving of SDG Goals.

Inclusive growth promotes peace and harmony in society as well as leads to better human development - hence all stakeholders must unite to ensure inclusive growth.

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5. राष्ट्रीय स्वच्छ वायु कार्यक्रम (NCAP) के परिणाम का मूल्यांकन कीजिए। मिशन LiFE वायु प्रदूषण के मुद्दे का समाधान करने में NCAP को कैसे पुनर्जीवित कर सकता है? (150 शब्दों में उत्तर दीजिए) 10

Evaluate the outcome of the National Clean Air Programme (NCAP). How can Mission LiFE reinvigorate the NCAP in addressing the issue of air pollution? (Answer in 150 words) 10

National Clean Air Programme was launched in year 2017 for 132 non attainment cities where pollution load in Air was high. It target reduction of PM 2.5 & PM 10.0 (Particulate Pollution).

— Goal was to reduce the pollution load of Particulate matter by 30%; the progress has been far from satisfactory and the programme has been extended for another 2 years. (till 2024) with increased target of reduction of Particulate matter by 40% of base year level.

Although the NCAP has been to an extent able to reduce the pollutant load in air.

Mission LiFE — (Lifestyle for environment) was launched

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by PM Modi at COP26 in Glasgow which aims primarily to bring in lifestyle changes to reduce environmental degradation and promote sustainable consumption.

Majorly it focuses on:-
3R - Reduce, Reuse, Recycle
Promotes circular economy.

Mission LiFe can lead to less use of fossil fuels and adapting ecofriendly lifestyle of living in harmony with nature. This can reduce the pollution load on the environment - thus contributing significantly to the success of NCAP.

Green and clean environment along with sustainable lifestyle would sustain the ecosystem and protect humans from wrath of climate change. All citizens should try to imbibe Mission LiFE in their life to bring a change in lifestyle.

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6. पारिस्थितिक तंत्र पर वनाग्नि के प्रभाव की विवेचना कीजिए। वनाग्नि के खतरे से निपटने में UNEP के फायर रेडी फॉर्मूला के महत्त्व का वर्णन कीजिए। (150 शब्दों में उत्तर दीजिए) 10

Discuss the impact of wildfires on the ecosystem. Describe the significance of the UNEP's Fire Ready Formula in dealing with the menace of wildfires. (Answer in 150 words) 10

Wildfires are the fires which occur in the natural forests because of natural (lightning, volcano, stone friction) and anthropogenic causes.

Impact of wildfire.

1. Destroys the critical ecosystem
2. Increases in pollution load
3. Loss of biodiversity and threat of death of wild animals.
4. Economic losses as trees are grown for commercial purposes in commercial plantation.
5. Further marginalisation of vulnerable tribal and forest population due to huge economic losses and loss of livelihoods.
6. Forest become a net source of carbon rather than sink.

Menace of wildfire and UNEP's fire ready formula :—

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UNEP's formula talks about 60% expenditure should be done to planning and prevention of forest fires and 40% to mitigation and response to forest fire.

In India and throughout the globe forest fires are rising
- Hawaii forest-fire
- Australian bushfire.
- Fire in Uttarakhand Hills.

Ways to prevent
1. proper planning, hazard mapping and vulnerability assessment through ISRO satellite mapping.
2. Reducing the fire ready load of material (pine needles)
3. Avoiding monoculture practices.
4. Strictes patrolling and surveillance through Drones and satellite
5. community sensitization and involving local community

Forest fires are a menace if left uncontrolled and would further increase global warming and accelerate climate change. It needs to be prevented.

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7. हाल ही में, भारतीय अंतरिक्ष अनुसंधान संगठन (इसरो) ने लघु उपग्रह प्रक्षेपण यान (SSLV) नामक अपना नया रॉकेट प्रक्षेपित किया। इसके क्या लाभ हैं? आने वाले वर्षों में SSLVs इसरो के लिए कैसे गेम चेंजर सिद्ध हो सकते हैं? (150 शब्दों में उत्तर दीजिए) 10

Recently, the Indian Space Research Organization (ISRO) launched its new rocket called Small Satellite Launch Vehicle (SSLV). What are its advantages? How can SSLVs be a game changer for ISRO in the years to come? (Answer in 150 words) 10

Small satellite launch vehicles (SSLV) are the latest addition to ever increasing technological armory of ISRO. These are small launch vehicles designed to launch smaller satellite upto 500kg in low earth orbit.

Advantages:

1. Low turnaround time.
2. Increased number of launches
3. Separation of commercial interest from strategic interest as SSLV can be used for commercial launches of small sizes.
4. Increased foreign exchange earnings.
5. Promotion of science & Technology and involvement of private sector in space missions.
6. Helps to earn good will from poorer and small nations of Africa and SAARC countries.

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How will it be a game changer

① competitive advantage - ISRO is known to be a low cost - reliable solution provider and with SSLV it can help boost Research, & education in India as well as abroad.

② Growing demand from foreign players and private sector for low ~~death~~ satellites for GPS, internet.
ex - Starlink constellation of satellite.
- Kalamsat - by university students.

③ commercial earnings to fuel further deep space research.

With the ever increasing demand for technology SSLV can position ISRO as cost effective and reliable space service provider and position India as next hub of commercial space exploration.

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8. बायोपाइरेसी विकासशील विश्व के मौजूदा पारंपरिक ज्ञान के लिए प्रमुख चिंता का कारण क्यों है? भारत सरकार द्वारा मौजूदा पारंपरिक भारतीय ज्ञान की सुरक्षा के लिए क्या कदम उठाए गए हैं? (150 शब्दों में उत्तर दीजिए) 10

Why is biopiracy a cause of great concern to the existing traditional knowledge of the developing world? What steps have been taken by the government of India for protecting the existing traditional Indian knowledge? (Answer in 150 words) 10

Biopiracy refers to the illegal usage of biological resources, traditional knowledge of the country without giving economic benefit.

e.g. patenting of Neem, Haldi & Basmati rice by foreign countries.

Why it is a cause of concern.

1. Lack of respect for indigenous traditional knowledge.
2. Not giving economic benefits to the community involved in protection and preservation.
3. Violation of community and sovereign rights.
4. Potential misuse of the benefits derived from biological resources.

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(5) Increased exploration by Multinational companies and enhanced demand has further aggravated the situation.

Steps taken by Government of India to protect from Biopiracy.

1. Biological diversity Act 2002 which aims to establish National, State and district level bodies for research and exploration of bio resources. (Regulates the use)

2. PPVFR Act; Protection of Plant varieties and Farmers Rights Act, 2001 which recognises the importance of Farmers and community as conservators of bio resources. Appropriate penal provisions for violators.

3. India signatory to convention on biological diversity and Cartagena and Nagoya protocol for bio resources (Benefit-sharing)

Biopiracy deprives the community of due respect and economic rewards it must be checked to derive sustainable use of bio resources.

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9. असम राइफल्स को पूर्वोत्तर भारत में सीमा प्रबंधन और उग्रवाद से निपटने में किन चुनौतियों का सामना करना पड़ता है? चर्चा कीजिए कि कैसे इन चुनौतियों के समाधान हेतु इस बल के फोकस में बदलाव की आवश्यकता है। (150 शब्दों में उत्तर दीजिए) 10

What are the challenges faced by the Assam Rifles with regard to border management and tackling of insurgency in North-East India? Discuss how these challenges require a reorientation of the force. (Answer in 150 words) 10

Assam Rifles is the oldest Paramilitary force in the country with its origin during the British Raj. It has been entrusted with Internal security in the North Eastern (NE) parts of our country.

Challenges faced by Assam Rifles

1. Duality of control (Both by Home ministry and Defence Ministry)
2. officers drawn from Army and Jawans are drawn from internal recruitment, creates problem of coordination and administration.
3. complex terrain and topography of North East further aggravates the situation.
4. presence of large number of ethnic, tribal and group faultlines.

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(5) Lack of clear communication with local administration and police.

(6) Porous Borders and free movement regime. At times the functionality is dual and multiple. CBF in Bangladesh coast, ITBP and Indian Army in Arunachal Borders.

Reorientation of Force is needed

(1) Better command and management by putting under one Ministry and absolving from dual control.

(2) More localised recruitment of Jawan from the states of North East

(3) Enhanced training and provision of state of art technology like Drones, Satellite imagery, Night vision devices.

(4) Improved coordination with local administration.

Assam Rifles are the legendary force with good track record of its performance. It needs to get rid of bottleneck to provide better security.

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10. अंतरिक्ष में शस्त्र स्थापित करने की होड़ अंतरिक्ष को शस्त्रों के संघर्ष का अगला युद्ध क्षेत्र बनाते हुए जल्द ही उस सीमा को पार कर सकती है जहां से वापस लौटना संभव नहीं होगा। अंतरिक्ष के शस्त्रीकरण के लिए उत्तरदायी संभावित कारण क्या हैं? इसके निहितार्थों पर चर्चा कीजिए। (150 शब्दों में उत्तर दीजिए) 10

The race to put weapons in space may soon pass the point of no return making space the next theatre of arms struggle. What are the possible reasons behind the weaponization of space? Discuss its implications. (Answer in 150 words) 10

Weaponization of space refers to placement of weapons, weapons of mass destruction and other conventional weapons in space.

The phenomenon got highlighted even since India launched its Anti satellite system (Mission Shakti) to destroy enemy satellites.

Reasons behind weaponization of space

- Military superiority achievement
- Hybrid warfare being the new norm.
- Increased demonstration of capacity to improved weapons tests.
- Rising tensions in the global arena (West vs Russia (India vs China)

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- No proper outspace treaty and lexity in implementation.

Implications

1. Increased space debris
2. Threat to the communication and satellite architecture present in space.
3. Competition for already limited radiobands and space availability.
4. Increased surveillance over enemy countries.

Way out-

1. Reiterating and negotiation outer space treaty.
2. Involvement of UN security council and multilateral bodies.
3. Promoting peaceful use of space and banning any further weaponization.

Space is a common good which must be used for human peaceful endevours not as a new theatre of war, as it would threaten the existence of humanity itself.

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11. हाल ही में, जवाहरलाल नेहरू पत्तन (JNP) भारत का पहला 100% लैंडलॉर्ड पोर्ट बन गया है। लैंडलॉर्ड पोर्ट मॉडल से आप क्या समझते हैं? पत्तनों के प्रबंधन में प्रयुक्त विभिन्न मॉडल कौन-से हैं? (250 शब्दों में उत्तर दीजिए) 15

Jawaharlal Nehru Port (JNP) recently became the first 100% Landlord Port of India. What do you understand by the Landlord Port model? What are the different models employed in the management of ports? (Answer in 250 words) 15

India is bestowed with a vast coastline of 7500 km which enables it to trade with world through network of major and minor ports along entire coast of India.

JNP (Jawaharlal Nehru Port) is one of the premier port of our country and container port on west coast.

To improve the efficiency and turnaround time government has come out with different model of operation called Landlord port model.

What does it mean. ?

The port authority (Government body) remains the landowner of the port and the operations and services are leased out and outsourced to the private parties in this model.

Benefits of this model :-

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None of the Indian ports are in top 10 ports of the world as we have issues of efficiency and delayed operation, this model is set to improve governance and operation.

(2) Reduce turnaround time for cargo handling.

(3) Cost of operation is expected to comedown with increased efficiency and reduced turnaround time.

(4) Bringe in the best practices of the private sector.

(5) With improved focus on development of port through Sagarmala and Bharatmala coupled with PM Gati Shakti it will lead to improved exports and increase of Ease of Doing business.

Other models of management of ports :—

(1) Service model — In this case the owner as well as the operator of the operations is the government or

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port trust itself.
(Vizag port, Paradeep port)

(2) Private sector model – Herein the private sector leases the land and entire operations of management and handling of ports is done by private entity.
e.g. Adani port in Mundra.
Dhamra port by Adani group (Odisha)

Ports are the most important pillar of international trade as more than 80% of India's volume of trade is done through seas. Innovative and new models is the need of hour to improve efficiency and promote ease of doing business.

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12. भारत में कृषि मशीनीकरण को बढ़ावा देने के लिए शुरू की गई कृषि मशीनीकरण पर उप-मिशन (SMAM)) योजना के प्रदर्शन का विश्लेषण कीजिए। (250 शब्दों में उत्तर दीजिए) 15

Analyse the performance of the Sub-Mission on Agricultural Mechanization (SMAM) scheme launched to promote farm mechanization in India. (Answer in 250 words) 15

Farm mechanization refers to the process of using equipments and machineries to carryout the agricultural operations.
e.g. Tractors, power tillers, Rotavators, cultivators, seed drills.

Benefits of Farm mechanization

1. Reduces drudgery
2. Increased productivity and output
3. Improved Farm incomes through better yield.
4. Promotion of Rural employment

With the above benefits in mind, Government of India launched Submission on Agricultural Mechanisation, (SMAM) in 2014-15.

The main aim were:-

1. Promotion of agricultural mechanization

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(2) Development of farm equipment banks / centres or Custom Hiring Centre (CHC).

(3) Development of specialised farm equipments for operation in Indian conditions.

(4) Increased Research and development in farm machinery sector.

How has the progress been.?

(1) India still lacks behind other countries in Agricultural mechanisation.

USA - 95%.
Australia ≈ 90%.
China & Brazil ≈ 85%.

Whereas in India it is approximately at 30% and majority mechanization in India has been (tractorization)

(2) Although, progress has been made, but there are large regional variations with majority of mechanisation occuring in states of

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Haryana, punjab, Karnataka, Tamilnadu and low-level in North East and Eastern states.

Way forward :-

1. Renewed focus on Eastern and North Eastern states should be there.
2. promotion of small farm equipments like power tillers, power sprayers etc.
3. rigorous promotion of custom hiring centres by roping in FPO, cooperative societies.
4. Increased subsidy on farm equipment purchase.

Farm machinery can transform Indian agriculture from subsistence to commercial scale, which would help in export earnings and employment generation. hence lacunas and bottlenecks in SMAM must be overcome to improve farm machinery penetration.

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13. खाद्य प्रसंस्करण क्षेत्रक की अप्रयुक्त क्षमता का दोहन करने और इसके सामने आने वाली चुनौतियों का समाधान करने में डिजिटलीकरण की क्षमता पर चर्चा कीजिए। (250 शब्दों में उत्तर दीजिए) 15

Discuss the potential of digitization in harnessing the untapped potential of the food processing sector and resolving the challenges that it faces. (Answer in 250 words) 15

Food processing is that sector of economy which utilizes agricultural produce to derive value added and enhanced products.

e.g. [Jam & jelly from fruits.
Pickles & sauce from vegetables.

Digitization is the use of technology to improve the existing state of affairs in a given context.

Food processing sector is considered as the surprise sector of our country; which has potential of 77 to billion USD for exports and creation of 10 million jobs.

How digitization can help in Food processing sector?

① Improved accessibility of capital for industries through schemes like Mega Food Parks etc.

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(2) Better traceability to increase the demand in exports market

(3) Digitization can help new entrepreneurs in food processing through training, capacity building and handholding.
online trainings being conducted by ICAR - Research Institutes for food processing).

(4) Digitization brings in transparency, speed and efficiency. Many food processing plants are delayed due to bureaucratic hurdles, hence improved digitization may help in single window clearance and reduction of time.

(5) Digitization can help to connect with potential markets in overseas and also help in making customized products.
(video conferencing facilities for market exploration)

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Challenges with digitization

1. prevailing digital divide in the country.
2. Lack of digital resources (Laptops, smart equipments penetration)
3. connectivity and coverage issues in rural hinterland.

Way forward

1. schemes like SAMPADA Yojna, PMFME needs to be implemented at ground level.

Food processing sector has immense potential; what is lacking the collective synergy and effort for development. Digitization can bridge this gap.

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14. भारत में भू-अभिलेखों के आधुनिकीकरण का क्या महत्व है? इस आलोक में राष्ट्रीय जेनेरिक दस्तावेज पंजीकरण प्रणाली (NGDRS) की विशेषताओं का वर्णन कीजिए। (250 शब्दों में उत्तर दीजिए) 15

What is the significance of land record modernization in India? In this light, state the features of the National Generic Document Registration System (NGDRS). (Answer in 250 words) 15

Land records are the details of ownership status of the land. (Patta, ownership certificate, Registry details etc).

Importance of land records modernization (LRM)

- Improves the digital governance.
- Majority of pending cases in Indian courts are related to land issues; digitization would reduce litigation.
- Prevents fraudulent transaction and protects the citizen from fraudy.
- Better targeting of government schemes like PM-Kisan, socio-economic census.

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- improves the ease of doing business and increases the prospects of industrial growth and development as land acquisition becomes easier.

Challenges in Modernization

1. Land is a state subject, effective coordination is lacking.
2. Prevailing digital divide and digital illiteracy amongst people.
3. Lower penetration of internet & computers in rural areas; where vast majority of land is there.

In order to bring in modernization of land records, various initiatives like

Bhulekh
Bhuvan portal
Swamitva scheme

has been launched.

National Generic Document Registration System (NGDRS) is one such step;

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Advantages & Features.

① Single window for all land related transactions.
(Registration, Payment of taxes, Title deeds and ownership)

② Person need not visit multiple offices multiple number of times for the land records registry.

The poor quality of land records and digitization of land records is a major challenge which NLDRS aims to redress. In this regard NLDRS must be popularised and implemented throughout the country.

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15. 'प्रधान मंत्री फसल बीमा योजना' की शुरुआत से ही प्रौद्योगिकी के उपयोग ने इसकी सफलता में महत्वपूर्ण भूमिका निभाई है। चर्चा कीजिए। इस योजना को अधिक किसान-अनुकूल बनाने के लिए और क्या बदलाव किए जा सकते हैं? (250 शब्दों में उत्तर दीजिए) 15

The use of technology has played a key role in the success of the 'Pradhan Mantri Fasal Bima Yojana' since its inception. Discuss. What further changes can be incorporated to make the scheme more farmer-friendly? (Answer in 250 words) 15

Pradhan Mantri Fasal Bima Yojana (PMFBY) is the crop insurance scheme of Government of India.

Some of its features :-

① Uniform Premium for different category of crops.
- Kharif - 2 %.
- Rabi - 1.5 %.
- Horticulture & Annual crops - 5 %.

② Use of technology for implementation.

What all technologies have been used :-

① Improved data gathering through use of GIS, GPS, Remote sensing for assessing damage & losses.

② Use of Drones for evaluation and monitoring.

③ Digital complaints and

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(इस भाग में कुछ ना लिखें)

redressal measures like use of smart-phone based application for claims.

(4) Digital land records are being used.

(5) Digital payment for the sum insured and the premium payment through IMPS, NEFT etc.

Earlier crop insurance models relied excessively on human intervention whereas PMFBY leverages usage of technology.

However, the operation has been far from satisfactory, the reasons are :-

(1) Tussle between state government and central government regarding premium payment.

(2) Involvement of private insurers who delay the release of insurance amount in case of calamities. Long settlement period means the propose of insurance.

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③ Frequent changes brought about central government with regards to premium payment.

Way out :—

① premium payment must be ensured by state and central government at a timely manner.

② Proper and timely release of claims by invoking technology like (GPS Drone) to assess damage and digital payments to reimburse the claims).

③ Bell Model of crop insurance wherein in case of No claims the assured premium being returned to government and in case of large claims the burden is shared with the insurers; needs to be implemented.

Crop insurance insures farmers against highly vulnerable climate and ensures food and economic security to the country; hence all efforts to be made to make crop insurance penetrate more into agriculture system.

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16. चर्चा कीजिए कि कैसे नवीकरणीय ऊर्जा की ओर ट्रांजिशन भारत में महिलाओं के जीवन को बदलने और उनकी पूर्ण क्षमता को उजागर करने का सामर्थ्य रखता है। (250 शब्दों में उत्तर दीजिए) 15

Discuss how the transition towards renewable energy has the potential to transform the lives of women in India and unlock their potential. (Answer in 250 words) 15

Renewable energy and the non-conventional sources of energy apart from the fossil fuels and conventional sources.

eg. solar energy, wind energy etc.

Renewable energy (RE) is the need of hour in light of climate change and India is making rapid strides towards transition to renewable energy.

How ??

Part of India's Nationally Determined contribution to produce and meet 50% of energy requirement through RE. India intends to produce 500 GW by 2030; from Renewables.

Energy security is of prime concern in promoting and transforming of women.

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How can RE transform life of women and unlock their potential

① women can be involved in production of Renewable energy
Solar energy — PM-KUSUM scheme for solar pumps
SRISTI — for solar Rooftop installation to generate energy.
women can be have decision makers in implementing this energy source.
e.g. solar Mamas in Africa.
Skill development and training can be harnessed to increase role of women in producing solar energy.

② Biomass gasification and energy generation through biomass and agriculture residues.
(crop residues cow dung)
Rural women can be leveraged for biogas generation and gasification purpose through self help groups and cooperatives.

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Energy security and access to Renewable and clean energy can lead to women empowerement through:-

1. Improved learning outcomes.
2. Increased employment opportunities.
3. Reduced drudgery in collecting Fire wood and Fuel wood.
4. Equitable and sustainable growth through women SHG involved in SHG RE generation.

Renewable energy is the sunrise sector which has potential for economic development and social development along with environmental sustainability as women are most vulnerable to climate change; RE can be a game changer in this regard.

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17. जलवायु परिवर्तन भारत द्वारा भुखमरी और कुपोषण दूर करने में सामना की जाने वाली चुनौतियों में कैसे वृद्धि कर रहा है? 2030 तक शून्य भुखमरी प्राप्त करने की भारत की प्रतिबद्धता के संदर्भ में चर्चा कीजिए। (250 शब्दों में उत्तर दीजिए) 15

How does climate change exacerbate the challenges that India faces in eliminating hunger and malnutrition? Discuss in the context of India's commitment to achieve zero hunger by 2030. (Answer in 250 words) 15

Climate change refers to the large scale change in the existing atmospheric and weather patterns of a place.

India is already facing the challenge of hunger and malnutrition and climate change is going to worsen the food security situation and worsen the conditions of life.

How climate change (CC) can impact hunger and malnutrition

— Climate change increases the vulnerability of disasters like drought, floods which can cause widespread crop loss and damage.

— CC can also have a profound impact on the

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existing cropping pattern.
(Yield of wheat is getting reduced due to higher temperature).

⇒ An adverse impact on production of many fruits and vegetables.
(Temperate crops are likely to be more impacted because of the climate change)

⇒ Climate change has the potential to cause large scale displacement (climate refugees) who would be highly vulnerable to food security.

⇒ CC is promoting degradation and desertification which further reduces the arable land. India has 17% of world population and only approximately 3% of land resources, this would endanger the situation further.

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CC is going to cause multitude of problems like shortage of arable land, reduction in yield non-production of many essential crops which are essential for food and nutrition security

The goal of achievement of zero hunger by 2030 would remain a distant dream as the very existence of agricultural and food production system is at threat.

Way out :—

1. climate resilient agriculture needs to be promoted. (NICRA by ICAR)
2. using appropriate crop management and cropping pattern.
3. promotion of Millets as they ensure nutrition and food security and can withstand climate change.

Proper technological, agricultural and scientific interventions are needed to thwart ill effect of climate change on food security.

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18. डिजिटल ट्विन प्रौद्योगिकी से आप क्या समझते हैं? इसे अपनाने के लाभ और चुनौतियां क्या हैं? (250 शब्दों में उत्तर दीजिए) 15

What do you understand by digital twin technology? What are the benefits and challenges in its adoption? (Answer in 250 words) 15

Digital Twin technology are the latest technologies as part of Industrial Revolution 4.0. In this a digital twin of the actual production system is made to study the real production system.

Digital twin technology studies and analysis the technology from temperature, pressure, thermodynamics and other perspectives.

Benefits

1. Helps to study a new nascent technology and machinery and improvise
2. Increases efficiency of the machines.
3. Reduces the chances of failure of

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machineries.

Challenges.

1. very costly computer generated programmes are needed which entails huge cost.
2. chances of misuse and manipulation of technology to weaponise are there.
3. Emerging economies and underdeveloped countries might face the risk of losing out in competition as they are at very nascent stage of industrialisation.

Digital twin technology has potential to revolutionize industrial revolution and promote industrial efficiency hence its use and development must be harnessed and promoted.

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Don't write anything this margin (इस भाग में कुछ ना लिखें)

19. आतंकवाद के वित्तपोषण पर अंकुश लगाने हेतु किए गए अनेक प्रयासों के बावजूद अंतर्राष्ट्रीय समुदाय के लिए यह एक मुख्य चुनौती बना हुआ है। चर्चा कीजिए। (250 शब्दों में उत्तर दीजिए) 15

Terrorism financing continues to remain a major challenge for the international community despite several efforts to curb it. Discuss. (Answer in 250 words) 15

Terrorism financing refers to the financing of terrorist and extremist activities by states, Non-state actors, NGOs, individual etc.

Why it has remained a challenge.

① No clear cut concrete definition of terrorism exists, and in lack of concrete definition tackling funding issues remain a challenge.

② Many states are using it as a tool of achieving their ulterior motives.
e.g. Pakistan terror financing is a state policy against India.

③ Existence of safe tax haven countries.

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(4) Proliferation of darknet, cryptocurrency, illicit drugs trade which makes it even more difficult to track and hunt the financing.

What are Global efforts in curbing terror financing ??

(1) Financial Action Task Force
- It comes out with Greylist and blacklist - to check on countries known as perpetrators of terror financing.
"Pakistan, Iran, Turkiye" have been at different times placed in Greylist.

(2) UN's resolution on tackling organised crime and check on drugs trade and narcotics.

Way forward :-
Stricter implementation of FATF Greylist and blacklist and soliciting international

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Collaboration to choke the funds for terrorist organism.

— Working the problem of Drug trafficking, human trafficking through multilateral support and cooperation as they are the major source of terror financing at international stage.

— Coming out with a global definition of terrorism as that of India's proposal at the United Nations. (CCIT) —

Terror financing helps the thriving of global terrorism nexus, proper sensitization along with international collaboration backed by national laws is the need of the hour to check this menace.

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20. कृत्रिम बुद्धिमत्ता (AI) में होने वाली प्रगति से राष्ट्रीय सुरक्षा के दृष्टिकोण से अवसरों के साथ-साथ चुनौतियों में भी वृद्धि होगी। भारत के संदर्भ में चर्चा कीजिए। (250 शब्दों में उत्तर दीजिए) 15

Advances in artificial intelligence (AI) will progressively multiply the opportunities as well as challenges from the national security perspective. Discuss in the context of India. (Answer in 250 words) 15

Artificial Intelligence is the method of technical and cognitive skills like intelligence imported into the electronic systems (e.g. computers, smart watches, smart cars)

It relies on the usage of Internet, data and sensors.

AI can be a double edged sword with regard to National security perspective

— How AI can act as opportunities in National security.

① Tracking down radical content online.

② Identification of criminals and Terrorists through Facial recognition and behavioral pattern.

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- (3) can be used for surveillance in sensitive areas and on online space. (e.g. Tracking through social media and monitoring the activities of anti social elements)

(4) AI can help check the cybersecurity threats by early identification and warning discemination.

How it can be a challenge.

(1) Increases the scope of warfare from traditional to hybrid warfare with involvement of Robots and AI powered equipments and weapons.

(2) AI can be used for training and recruitment by terrorist organisations by integrating it on social media to identify lone wolf attackers and anti social elements.

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(3) AI can lead to increased Bank frauds and scams by invading into the mobiles.

(4) Non-local nature of warfare, AI can be operated from remote locations and different jurisdictions making it relatively difficult for law enforcement agencies to catch hold of.

AI is a progressive technology and has got immense potential in terms of destruction and opportunities. The opportunities needs to be harnessed and the challenges needs to be identified to remove any imminent threat and take corrective measures.

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GENERAL STUDIES (TEST CODE : 2418)

Name of Candidate	NITESH KUMAR MISHRA		
Medium Eng./Hindi	ENGLISH	Registration Number	154025
Center	ONLINE/DELHI	Date	01/9/2023

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
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17	15	
18	15	
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20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न–पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **HINDI & ENGLISH.**
   इसमें बीस प्रश्न हैं **हिन्दी और अंग्रेजी** में छपे हैं।
3. **All questions are compulsory.**
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

Is student recommended for One-to-One mentoring?

Recommended	Strongly Recommended

9:47

EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

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1. विजयनगर साम्राज्य की मूर्तियों में अंतर्निहित प्रमुख लक्षणों का सविस्तार वर्णन कीजिए।

Elaborate on the key traits inherent to the sculptures of the Vijayanagara Empire. (Answer in 150 words) 10

Vijaynagar empire was one of the prominent and greatest Hindu kingdoms in southern India established by Harihar and Bukka in 1336 C.E.

Vijaynagar kingdom left an indelible mark in the art and architecture of India and were known worshippers of Virupaksha and ruled from Hampi.

Key traits of vijaynagar empire.

1. Beautiful sculpting on granite stones.
2. Majestic capital at Hampi
3. Well carved sculptures in Hampi, e.g. Virupaksha temple, chariot of stone etc.
4. The sculptures were religious in theme and the Mahanabmi Dibba, the Royal pavilion is glaring example.
5. The tribhanga postures in sculptures is remarkable.
6. Vijaynagar were also known for the exiquisite

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Bronze sculptures.

(7) The sculptures of pillars (like musical pillars) are an astounding example of acoustics and architectural engineering.

(8) murals at Lepakshi temple

Vijaynagar was perhaps the last prominent dynasty / kingdom in the great lineage of architecture monarchs and their history is vividly recorded by the great historians and travellers.

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2. महिला क्रांतिकारियों ने भारतीय स्वतंत्रता संघर्ष में साहसिक और अविस्मरणीय योगदान दिया है। चर्चा कीजिए।

Women revolutionaries made brave and unforgettable contributions to the freedom struggle in India. Discuss. (Answer in 150 words) 10

Indian Freedom struggle was the struggle against British colonists in the 18th and 19th century and people from different gender and strata immensely contributed.

Although Indian Freedom struggle was overall a non-violent freedom struggle, brief flashes of revolutionary activities can be observed.

Some of the prominent women revolutionaries are :-

1. Bina Das - At the age of 21 she shot governor of Bengal.
2. Pritilata Waddedar - she was one of the leading members in ransacking the clubs in Chittagong.
3. Suniti Chandori - led the Bhoyaneri revolutionary women group in the Chittagong armory raid
4. Madame Bhikaji Cama - Actively Protested Indian's

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Freedom struggle on the Foreign soil. First to hoist Indian Flag in Stuttgart. Conspired with revolutionaries like Shyamji Krishna Verma.

(5) Usha Mehta - led the Secret Congress Radio during Quit India movement of 1942.

Features of revolutionary activity
- (1) Individual heroic acts
  (2) Inspired the subdued women to join freedom struggle.
  (3) Terrorised the colonial masters.

The country's freedom struggle is enriched by the heroic and selfless acts of these brave women who sacrificed themselves for the freedom of India, they are worth emulating by the young generations of today.

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3. चर्चा कीजिए कि अंग्रेजों द्वारा भारत में अंग्रेजी शिक्षा की शुरुआत ने किस प्रकार देश में उपनिवेशवाद विरोधी प्रवृत्ति को मजबूत करने में सहायता प्रदान की है।

Discuss how the introduction of English education in India by the British helped strengthen anti-colonialism in the country. (Answer in 150 words) 10

English education in India was the conspiracy of British to create a class of Indians who would be Indians by blood and English by taste. This was tactful strategy to keep India under colonial rule.

What contributed to English education

1. Orientalist-Anglicist controversy
2. Macaulay's minutes
3. Woods Despatch.

How English education strengthened anti-colonialism

1. Made people aware of the western ideas of Equality, liberty and fraternity
2. Helped Indians raise propaganda in foreign soil like at London, Paris and Germany.
3. Promoted a sense of connect between North India and South

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India which was divided by language English acted as bridge.

(4) Led to development of press and bypass the gagging vernacular press act.

(5) Led to highlighting of British exploitative tactics to the outside world to create international pressure during later part of 20th century.

(6) Creating a class of Administrators like civil servants (Lord Sinha, S.N. Banerjee, Gokhale, Ranade) etc who formed and led public opinion.

The unintended consequence of promotion of English by British helped strengthen anticolonist mindset by generating opinion, creating western ideas of equality in Indians which ultimately led to demise of colonial rule in India.

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4. 20वीं सदी के अंत में सोवियत संघ के विघटन का भारत पर दूरगामी प्रभाव पड़ा है। चर्चा कीजिए।

The disintegration of the Soviet Union in the late 20th century had a profound impact on India. Discuss. (Answer in 150 words) 10

Soviet-union was then called as USSR (Union Soviet-Socialist Republic) which was formed after Russian revolution in 1917 and lasted till 1989.

Soviet-union and India Relations

- It was a reliable friend and partner (demonstrated during 1971 war)
- India's ideological and political philosophy of socialism inspired by Soviet-union.
- The Economic policies and planning (5 years plan, command economy) borrowed and inspired from Soviet-union

How the disintegration led to a profound impact-

(1) India had to reorient its partnership in global arena with shift towards western countries like USA and Europe.

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(2) change in the economic pattern of country in 1991 from closed to laissez faire and adopting liberalisation, privatisation and globalisation.

(3) India had to reorient and restructure its defence procurement requirement; ex-while USSR dominated our defence (MIG 21, warships, aircraft carriers) which shifted towards USA, France, Israel.

(4) India had to rebalance its friendship and allies with the change in world order from bipolar to multipolar.

USSR was a great influencer on the minds of our political leaders like Nehru and Indira, but with disintegration India made whole-force changes to its political, economic, diplomatic and defence strategies.

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5. मौजूदा मुद्दों को ध्यान में रखते हुए, भारत में शहरी अवसंरचना और परिवहन (मोबिलिटी) सेवाओं में सुधार की आवश्यकता पर लैंगिक दृष्टिकोण से चर्चा कीजिए।

In view of the prevailing issues, discuss the need for reforming the urban infrastructure and mobility services in India through a gender lens. (Answer in 150 words) 10

Urbanisation is on the rise within our country and approximate level of urbanisation as of today is 35%. This has brought many positive consequences like bringing women into mainstream.

However the issues pertaining to women in urban infrastructure and mobility service are many.

Some of the issues in urban infrastructure are :-

1. Lack of adequate Hostels, safe paying guests for women.
2. Gender inclusive workplaces are a big miss in non-metro cities.
3. Lack of women public toilets.

Mobility services

1. Lack of adequate and safe mobility services like public transport (Metro, Bus etc)
2. Instances of molestation and violence in public transport

How to address the issues

For infrastructure

1. Development of more number of working women

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hostels, paying guests
(2) Development of public creche facilities.
(3) Development more safe, clean and hygienic public pink toilets.
(4) promoting gender inclusive work station.

For Mobility services

(1) Increasing women only public transport services like pink buses, pink taxis.
(2) increasing number of reserved coaches in metros from currently one to atleast 2 or 3.
(3) implementing GPS trackers and SOS buttons in public transportation.

The women constitute almost half of the population and any laxity in participation of women would have bad consequences for economic growth and social development; its high time gender based infrastructure planning is put in practice to improve condition of women and enhance their participation without any fear.

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6. भारत में, 2011-21 में वृद्धजनों की जनसंख्या की वृद्धि दर सामान्य जनसंख्या की वृद्धि दर से लगभग तीन गुना थी। इस संदर्भ में, चर्चा कीजिए कि वृद्धजनों हेतु नीतियों का निर्माण भारत के समग्र विकास के लिए एक महत्वपूर्ण पहलू क्यों है।

In India, the rate of growth of elderly population in 2011-21 was about three times the rate of growth of the general population. In this context, discuss why policies for the elderly are a crucial aspect for India's overall development. (Answer in 150 words) 10

India's elderly population are on the rise and they form an essential contributor to our economy with their skill, expertise, training and knowledge. Elderly are people above age group of 60 years.

Issues with elderly

1. Lack of exclusive policy for elderly population
2. They face neglect from their own family and at times harassment
3. They are a special class which needs special attention like in infrastructure, mobility and health care.

Why the policies for elderly are crucial aspect for development.

1. They can be great contributors in economy. (Education, consultancy, care economy)

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(2) The diseases and geriatric problems are quite common. Health policies are exclusively needed.
AIIMS has established National Centre of Ageing for Age related care and treatment.

(3) Social security and welfare schemes are needed.

(4) Medical aid and devices like walking support, glasses, hearing aid are needed.

How can they contribute to economy?

(1) Example of Japan where elderly are contributing greatly to economy.

(2) They can be used to fill in the gaps and skills can be used for training, education, judiciary and school education.

(3) veterans can be good defence experts and political commentators as they are informed citizenry.

The population pyramid would shift towards ageing population and its reality, its time we device policies for better utilisation of their knowledge and give them health and social security.

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7. यद्यपि वैश्वीकरण मानवाधिकारों के उल्लंघन के लिए कथित तौर पर जिम्मेदार है, तथापि यह मानवाधिकार आंदोलनों को इसके अतिक्रमण और नकारात्मक प्रभावों का मुकाबला करने की अनुमति देता है। प्रासंगिक उदाहरणों के साथ सविस्तार वर्णन कीजिए।

While globalisation is allegedly responsible for human rights violations, it allows human rights movements to counter its excesses and negative effects. Elaborate with relevant examples. (Answer in 150 words) 10

Globalisation is the phenomenon of breaking of boundaries and promotion of economic, cultural and social integration of the world.

Globalisation has positive and negative impacts as well and one of them has been human rights violation.

Some examples :-

1. Exploitation of workers in the name of globalisation.
2. proliferation of concept of Gig workers without appropriate social welfare benefits.
3. proliferation of international terrorist organisations and radical groups like ISIS, Taliban.

But on the contrary globalisation has also contested excess and negative effects of human rights violation.

- e.g. 1. The Me too movement against sexual harassment

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was one of global outrage against sexual harassment which even reached Indian shores.

(2) Black lives matter movement which led to widespread condemnation against violation of rights of Downtrodden people (Black people in America) gt had similar ramifications for Dalits in India.

(3) International campaign against Islamophobia.

(4) The UN convention against Torture and ILO conventions on labour and child labour has all developed because of globalisation.

(5) The International Suffragate movement for voting rights for women

Globalisation has led to propagation of ideas and highlighted many human rights violations. the movement has crossed boundaries and the ramifications are positively impacting to reduce human rights violation.

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8. हिमालय की वर्तमान अपवाह प्रणाली काफी हद तक क्रमिक नदी अपहरण का परिणाम है। चर्चा कीजिए।

The present drainage system of the Himalayas is, to a great extent, the result of progressive river piracy. Discuss. (Answer in 150 words) 10

Drainage system is the system of waters flow through rivers and tributaries.

India has been bestowed with large drainage systems like of Indus, Ganga & Brahmaputra which are of Himalayan origin.

River piracy is the geographical process of capture of rivers by another river due to the geomorphic and erosional factors.

Present drainage system of Himalyas has undergone shift and changes because of river piracy.

examples.

— Yamuna river captured the erstwhile Ghaggar-Saraswati rivers and merged to form and change course of flow.

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- The Arun Kosi rivers in Nepal-India borders are in an example of river piracy and modern day drainage system of Kosi is an example.

Himalayan region is an active region where lot of geomorphic changes keeps on changing and River piracy is one such which has shaped current drainage pattern of our country and with climate change and increasing human interventions there are chances of increasing river piracy in future as well.

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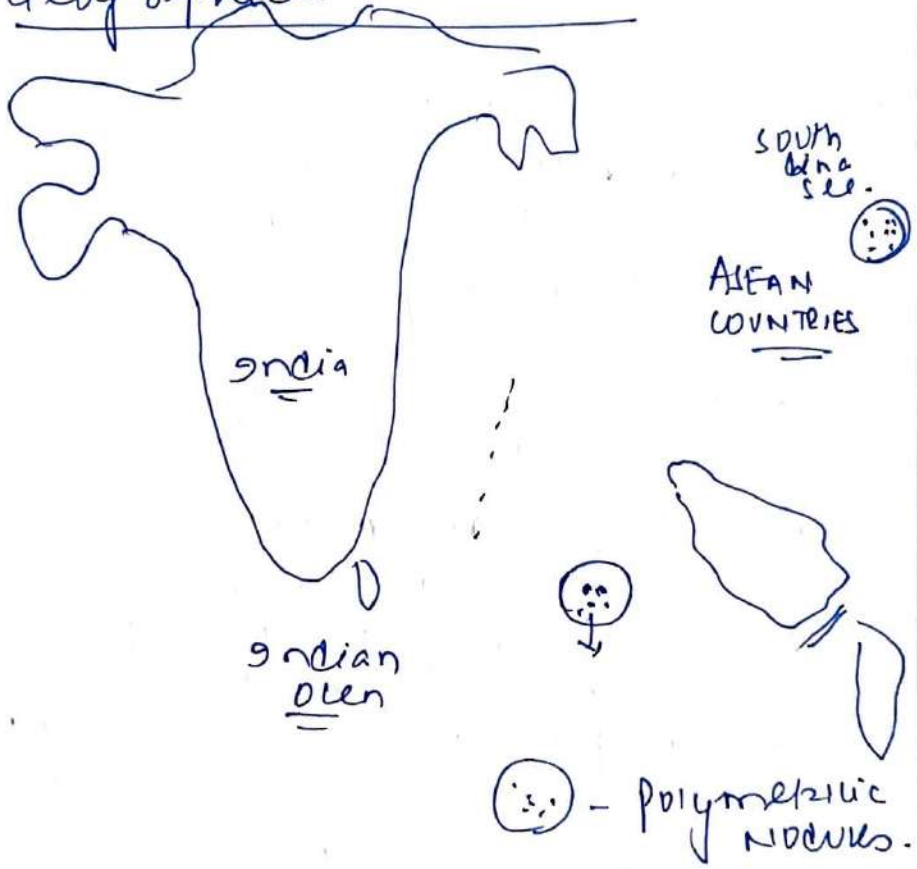
9. बहुधात्विक ग्रंथिकाओं (पॉलिमेटेलिक नोड्यूल्स) के भौगोलिक वितरण का उदाहरण प्रस्तुत करते हुए, उनके महत्व पर चर्चा कीजिए।

Illustrate the geographical distribution of polymetallic nodules and discuss their significance. (Answer in 150 words) 10

Polymetallic nodules refers to the combination of large deposits of metals like Manganese, Nickel, Copper, Molybdenum occuring in boulders inside the ocean.

Geographical distribution.



Indian Ocean Region and South China Sea region are very critical for Polymetallic nodules (PMN).

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Significance :-

1. Source of large scale strategic interests.
2. Important for energy security as large scale Nickel cobalt and copper can be extracted.
3. This can help in EV-Batteries as Nickel, cobalt from a great part
4. source of rare earth minerals.

Challenges in exploration

1. difficult to mine because of great depth.
2. Quantifying and commercial extraction.
3. The extraction of PMN can cause ecological concerns.

Way forward – International seabed authority has granted license to India for mining in Indian ocean region. Missions like Deep sea mission (Samudrayan) O-SMART etc.

PMN forms a critical part of energy requirement; this has huge economic and ecological potential, India must make sustainable effort to mine this.

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10. द्वीपसमूह से आप क्या समझते हैं? इनके निर्माण में शामिल विभिन्न प्रक्रियाओं को उदाहरण सहित समझाइए।

What do you understand by archipelagos? Explain the different processes involved in their formation, with examples. (Answer in 150 words) 10

Archipelagos are land (island) group of islands with sea surrounding them.
ex- Japan, Indonesia etc.

Archipelago are geographical Featured occuring inside the seas and ocean.

Different processes involved in their formation are;-

(1) volcanic eruption and mid oceanic eruptions.
The settling down of lava leads to formation of archipelagos
ex- Japan, Sunda, Java, Borneo (Indonesia)

(2) corals and Atollic formations like that of Maldives; here the coral reefs forms.

(3) Sedimentary deposits by rivers

(4) Rising sea level and coastal erosion

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Can also lead to formation of archipelagoes.

Importance

1. Human habitation
   - Hawaii islands, Japan, Indonesia.
2. Source of commercial, strategic interest
3. For Tourism potential and fishing potential.

Archipelagoes are one of the many diverse geographic landforms on the ocean which have been forming and will continue to form with ongoing geomorphic processes happening.

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11. भारत में जनजातीय और लोक कलाएं अपने अस्तित्व को बनाए रखने हेतु आधुनिक युग की कई चुनौतियों का सामना कर रही हैं। चर्चा कीजिए। साथ ही, इस संबंध में सरकार द्वारा प्रारंभ की गई विभिन्न पहलों को रेखांकित कीजिए।

Tribal and folk arts in India are confronting several challenges of the modern age in a bid to survive. Discuss. Also, highlight the various initiatives taken by the government in this regard. (Answer in 250 words) 15

India is a land of varied tribes and communities which have been practising their traditional art, craft which has formed the folk art of today.
examples — Madhubani paintings of Bihar
Warli Art of Maharashtra

But these art and tribal folk arts are facing challenges; they are

1. Rising modernity
2. Lack of support for marketing of these arts.
3. Increasing impact of modern education wherein traditional arts have been left behind
4. Rapid urbanisation has led to migration of artists in search of better economic avenues.
5. Advent of globalisation wherein westernisation and modernity have relegated traditional art to backstage.

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(6) The colonial policies and breakdown of traditional structure of royalty led to a rapid decline of art forms.

(7) Increased penetration and Integration in Tribal areas of the industries, mines, dams which led to displacement and loss of habitat of these Tribal people.

(8) Mostly women were involved in folk arts (like Mithila Paintings), now women are shifting to other economic and educational avenues.

Various initiatives have been taken by government to protect these invaluable heritage of incredible India; some of them are :-

(1) <u>Constitutional provisions</u>

— 5th schedule and 6th schedule areas have been earmarked to protect distinct culture of Tribal population.

(2) Legal provisions in the form of reservation

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in education.

Other provisions :-

1. Establishment of TRIFED to market tribal art & crafts.
2. Establishment of Tribal Universities and promoting research & development
3. Protecting the traditional art through wall painting in cities like Sawai Art, Warli Art
4. Paintings of Trains to promote about the traditional art like Bihar Rajdhani has Mithila/Madhubani paintings.
5. Promotion of cultural Festivals, craft melas.

Schemes like - USTAAD and skill development of Traditional artisans.

6. GI Tags to many tribal and Folk arts.

The folk arts are invaluable heritage of our country which instils a sense of pride and promotes diversity, it must be preserved through all possible means.

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12. भारतीय शास्त्रीय नृत्यों की विशिष्ट विशेषताओं पर प्रकाश डालिए। साथ ही, चर्चा कीजिए कि ये नृत्य किस प्रकार आध्यात्मिकता की अभिव्यक्ति हैं।

Highlight the distinguishing features of Indian classical dances. Also, discuss how these dances are a manifestation of spirituality. (Answer in 250 words) 15

Indian classical dances are those dance forms which are recognised by Sangeet Natak Academy to be of classical in status and these dance forms finds mention as are derived from Bharat Muni's Natyashastra.

Classical dances are :-

1. Bharat Natyam - from Tamil Nadu
2. Kuchipuri - Andhra
3. Odishi - Odisha
4. Kathakali
5. Mohiniattam → Kerala
6. Kathak - UP
7. Manipuri

Distinguishing features of these dance forms :-

1. Elements of Masculinity and Feminity
   - Tandav - [Masuline
   - Lasya - Feminine]
2. Tribhanga posture - Body bent at 3 positions.
3. Use of traditional instruments like Santoor, Sehnai, cymbals.

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(4) The dance consists of dance, drama and expressions blended into one. Focusing on the Navarasas. (Nine emotions)

(5) Traditional dress materials used like silk sarees in Bharat-Natyam, Odishi sarees in Odisha silk sarees and clothes in Manipuri dance.

These dances are manifestation of spirituality — How?

→ The main guiding light of all dance forms in India is of Lord Shiva and his cosmic Tandav Dance.

→ Manipuri dance is associated with dance of Shiva and Parvati in the valleys of Manipur.

→ Mohiniattam is associated with Vishnu's dance as a maiden during churning of Ocean to take away nectar from demons.

→ Bharat Natyam had its origin and development with

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worship of Lord Shiva in the Temples.

→ Odishi Dance were a part of Jaggenath cult of odisha where it was performed to please the Lord Jaggenath.

Almost all the classical dances have an element of spirituality embedded in them, and this is perhaps the reason there has not been much tampering and changes in these dance forms.

The element of spirituality has also led to preservation of these dance forms like Bharatnatyam and odishi revival. Many of these dances are performed on the occasion of festivals like onam, pongal etc.

Classical dances are invaluable heritage passed on since generations. We must preserve, protect and propagate these dance forms.

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13. चौरी-चौरा की घटना द्वारा भारतीय स्वतंत्रता संघर्ष की गति को कुछ समय के लिए धीमा कर देने के बावजूद, असहयोग आंदोलन भारतीय स्वतंत्रता संघर्ष के इतिहास में एक निर्णायक मोड़ के रूप में बना रहा है। चर्चा कीजिए।

Despite the Chauri Chaura incident slowing down the momentum of Indian freedom struggle for a while, the Non-Cooperation Movement remains a watershed in the history of the Indian freedom struggle. Discuss. (Answer in 250 words) 15

Chauri chaura incident occured during the course of freedom struggle in which a violent mob of protesters torched a police station at chauri chaura in Gorakhpur district of UP. Many policemen were burnt alive in this act.

This act of brutal violence led Gandhiji to halt the Non-cooperation movement (NCM) which was at its full stem.

NCM movement was spearheaded by Gandhiji to get the demands of political and civil rights addressed from the British and ensure political freedom for country. No form of cooperation to the Britishers was sought from this movement.

Features

① Boycott of foreign goods
② peaceful picketing of liquor shops.

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(3) At many places it was coupled with no tax campaign.

(4) Complete boycott of British institutions like schools, colleges, law courts and assemblies.

Why it remains a watershed moment in Indian Freedom Struggle?

(1) It was first mass movement launched by Gandhiji which encapsulated common masses.

(2) Involvement of all sections of life, women, school children, college student, lawyers, politicians, industries.

(3) Unique and marvellous show of Hindu-Muslim unity was on display as it was clubbed with Khilafat issue.

(4) Practice of crippling down the administration through Satyagraha, Non-violent methods at this scale was used for first time.

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(5) led to emergence of leaders like Nehruji, Subhash Bose.

(6) created a string of dedicated Freedom Fighters and prepared their masses for further mass struggle.

(7) Also led to the trend of violent revolutionary nationalism (Ramprasad Bismil, Azad and Bhagat Singh), who were annoyed with abrupt end to the NCM.

The NCM established and deepened the fact that there would be no compromise with ideas of non-violence and truth as the primary weapon of mass struggle and organised country and united them at large scale to oust colonial rule, hence it can be called as watershed moment in our freedom struggle as earlier movements were not of this national scale and magnitude.

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14. शिक्षा और विदेशी मामलों के क्षेत्र में डॉ. सर्वपल्ली राधाकृष्णन के योगदान को वर्णित कीजिए।

Bring out the contributions of Dr. Sarvepalli Radhakrishnan in the fields of education and foreign affairs. (Answer in 250 words) 15

Dr. S. Radhakrishnan was a pioneer educationist, freedom fighter, first vice president and second president of our country.

His contributions in field of Education.

① He was vice-chancellor of Banaras Hindu University and Andhra University.

② Radhakrishnan commission after independence with regard to education reforms was spearheaded by him which guided the path and system of education in post-colonial India.

③ His birthday is celebrated as "Teachers day" on 5th September throughout the country.

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(4) He combined teaching grounded with Indian philosophy which made education deep rooted in Indian culture along with modernity.

His contributions in field of Foreign affairs.

(1) He was the leader of Indian delegation to UNESCO to form the guiding the principles. He was Chairman of UNESCO's board.

(2) He served as ambassador to soviet union which led to the establishment of strong and friendly relations with USSR.

Dr. Radhakrishnan's writings and commentaries on upanishads and ancient scriptures form a critical part of modern day studies.

It is indeed a great-

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(इस भाग में कुछ ना लिखें)

work of Radhakrishnan in field of education which led to development of modern education and a tribute to him by celebrating Teachers day to commemorate the valuable contribution by him in field of education.

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15. कृषि के नारीकरण को प्रेरित करने वाले कारकों को सूचीबद्ध कीजिए तथा इसके प्रभावों पर चर्चा कीजिए। साथ ही, उन तरीकों का भी वर्णन कीजिए जिनके माध्यम से महिलाओं को इस संदर्भ में सशक्त बनाया जा सकता है।

Enumerate the factors driving feminization in agriculture and discuss its effects. Also, state the ways in which women can be empowered in this regard. (Answer in 250 words) 15

Feminization of agriculture refers to phenomenon of increasing role of women in the field of agricultural activities.

Feminization of agriculture has picked up in the recent past and the factors driving it are :-

(1) Social causes - (i) Declining of patriarchial norms.
(ii) Reducing caste barriers.
(iii) Increased migration by men to cities in search of better economic prospects.

(2) Economic causes
Rising cost of living and increasing rural distress are compelling women to pick up agriculture as source of income;

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③ Political causes – Increased support of government policies for women agricultural workers.
– Globalisation and demand of agricultural produce is increasing additional labor force is contributed by women force.

④ Non-industrialisation and stagnation of rural industries leads to women to pick up agriculture.

⑤ Increased awareness, knowledge level of women (Agricultural education) along with modern demands like organic farming and zero budget natural farming which entails participation of women.

Effect of Feminisation of Agriculture.

① Increased rural income
② Improvement in status of women in household.
③ Led to constant production even though men have migrated to cities for jobs.
④ Promotion of women empowerement

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and formation of self Help groups by women to increase their profile.

Way forward for empowering women in Agriculture.

1. Increasing women's landholding as merely 14% women have title rights. (as per Agriculture Survey 2015-16)
2. Farm mechanisation tailored to the needs of farm women needs to be developed.
3. Promoting FPOs/ cooperative societies led and formed by women.
4. promoting gender budgeting in agricultural budget
5. women specific loan and credit facilities through PACS and commercial banks.

Feminisation of agriculture can reap better dividends for our country if history backed with land rights, government policies and future mechanisation.

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16. भारत में, आत्महत्या 15-29 आयु वर्ग के लोगों में मृत्यु के प्रमुख कारणों में से एक बन गई है। इसके लिए उत्तरदायी कारणों को स्पष्ट करते हुए, राष्ट्रीय आत्महत्या रोकथाम रणनीति के प्राथमिकता प्राप्त क्षेत्रों पर चर्चा कीजिए।

In India, suicide has become one of the leading causes of death among those aged 15-29. Bringing out the reasons behind the same, discuss the priority areas of the National Suicide Prevention Strategy. (Answer in 250 words) 15

Suicide is the way of ending one's life by different methods like hanging, poisoning etc.

This has been a social menace in our country and the issue becomes severe when the youth (15-29 years) commit this act as it leads to valuable loss of human resource and causes mental agony and pain to the family for long time.

Reasons behind increasing suicide amongst youth

1. Poor mental health conditions
2. Performance and exam related stress (KOTA coaching institutes aspirants of IIT and medical commit)
3. Stress induced due to economic and job security related to

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covid-19 induced pandemic.

(4) Family related issues like poverty, strained relation with parents and strained relation between parents.

(5) Falling prey to the evils of drug addiction, betting and gambling.

(6) Sometimes in case of girls because of sexual harassment, pornography and violation of digital privacy.

(7) Societal pressure of caste and love related issues.

(8) Isolationism due to lack of parental care.

Some of the priority areas of National suicide prevention strategy should be :-

(1) Proper talks on mental Health

(2) Removing social stigma associated with mental health discussion.

(3) Revamping the education curriculum to promote life coping skills and stress management

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(4) promotion of sports, games, yoga, meditation as the youth have deviated away from this due to online games and digital world.

(5) Stress management talk by experts and regular counsellors in school to identify symptoms of stress.

(6) Economic growth and development which would lead to creation of more jobs and prosperity

(7) Decriminalizing suicide and treating the suicide victims who survived with due care

Suicide breaks down the family and causes irreplaceable losses in family structure and promoted a wrong practice in society; suicide prevention strategy is the need of the hour with involvement of all the stakeholders.

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17. विश्व भर में पाए जाने वाले विभिन्न प्रकार के मरुस्थलों के निर्माण की व्याख्या करते हुए, उनका विवरण प्रस्तुत कीजिए और उनकी विशेषताओं का उल्लेख कीजिए।

Explaining their formation, provide an account of the various kinds of deserts found across the world along with their characteristics. (Answer in 250 words)

15

Deserts are the area which receives scanty precipitation. (less than 25 inches precipitation is received in a year.

Various kinds of desert and reason for formation are:-

Subtropical desert-

- Along the 15° North and to 30° North and south of Equator.
- Hot air causes precipitation in coastal areas and tropical region while air moving further interior has little moisture for formation of clouds.
  - e.g. Sahara Desert-

Rain shadow desert-

This type of desert is formed because the piece of land is isolated

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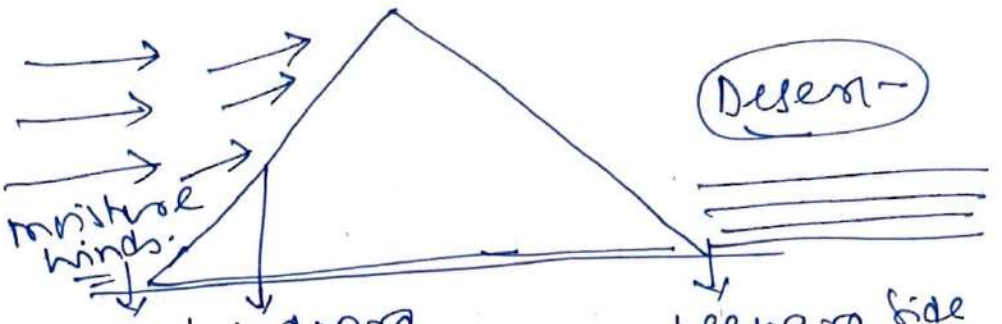
on rainshadow region.



Windward side.

All moisture laden winds forced to shed water here.

Leeward side

↓

NO moisture reaches here.

Rain shadow area.

Thar desert formed due to the Aravallis acting as barrier.

Parts of peninsular plateau also dry because of western ghats.

Interior desert / continentality.

These areas are located very far away from the coast and no moisture sources reaches them leading to aridity.

Gobi desert, Mongolia.

Coastal desert — Due to the impact of cold currents

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it gives desiccating effect near the coastal areas leading to absence of rain/rain bearing cloud. (Atacama desert, Chile) due to peruvian cold current

Cold desert — These deserts are formed in the polar ice cap regions. Even though they have water, they got locked in ice-sheets and ice-caps.
Arctic and Antarctic regions.

Deserts are unique features of landform on earth characterised by inhospitable, sparse population and of late tourism potential has generated in these geographical features. They hamper productivity hence desertification need to be checked.

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18. भू-संचलन के कारण निर्मित झीलों का संक्षिप्त विवरण देते हुए, झीलों के आर्थिक और पारिस्थितिक महत्व पर चर्चा कीजिए।

Giving a brief account of the lakes formed due to Earth's movement, discuss the economic and ecological significance of lakes. (Answer in 250 words) 15

Lakes are large water bodies of water which might be formed naturally - due to meteorotic activities or due to tectonic activities and artificially by man (Dams, Reservoirs)

Different lakes formed due to earth's movement -

- Tectonic lakes.
- Rift valley lakes.
- Glacial lakes
- Caldera or volcanic lakes.

Tectonic lakes - Formed due to bending / warping of earth's crust -
Lake Titice, Caspian sea.

Rift valley lakes - Formed when two blocks of earth move apart -, land gets sunken between two faults.
(Lake Tanganyika)

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Caldera lakes - These lakes are formed due to volcanic eruption and corresponding depression formed.

- Lonar lake

Economic significance

1. They are source of freshwater for drinking and industrial as well as human purposes
2. Used for Hydroelectric generation.
3. Used for agricultural purposes (irrigation)
4. Many lakes are used for transportation purpose
5. Lakes help in generating tourism. (Nainital, Kodaikanal)
6. Source of fish and food for human being

Ecological significance of lake

1. They are a habitat of wild animals, birds and aquatic organisms.
2. Conservation of biodiversity

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(इस भाग में कुछ ना लिखें)

(3) prevents flooding of cities / towns by absorbing excessive (water) storm water

(4) Regulates the microclimate of the place.

(5) Helps in recharge of groundwater

(6) Attraction and place of breeding for migratory birds.
- Chilika lake
- Tso Moriri

Lakes are very critical component of earth which has economic and ecological significance but of late the sorry state of affairs (drying, pollution) needs to be addressed as it is in the long term ecological and human benefit.

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19. भारत के पास 1,80,000 मेगावाट महासागरीय तापीय ऊर्जा उत्पादित करने की क्षमता है, हालांकि, इस दिशा में प्रगति धीमी रही है। इस संदर्भ में, संबंधित चुनौतियों को रेखांकित कीजिए और सुधारात्मक उपायों का सुझाव दीजिए।

India has the potential to generate 180,000 MW of ocean thermal energy, however, progress in this regard has been slow. In this context, highlight the associated challenges and suggest remedial measures. (Answer in 250 words) 15

Ocean thermal energy is harnessing the thermal energy of oceans (received from insolation) to generate electricity.

It is a renewable energy resource and in tropical country like India it has scope of generating almost 18000 MW energy.

Areas in India suitable for Ocean thermal energy harnessing

vast coastline with strong insolation received
- Maharashtra, Goa, Karnataka, Tamilnadu have huge potential.

In India the progress has been slow and negligible amount of energy is generated through this method.

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Reasons for slow growth

1. complex technological process.
2. Lack of industrial investment and technologies available with India.
3. Environmental concerns for investing in fragile coastal ecosystem.
4. Lack of government investment and support.

How to address these challenges

1. seeking international collaboration
2. promoting ocean based research through NIOT, chennai
3. Public investment through government spending and innovative financing like PPP Model.
4. Mainstreaming ocean energy just like solar and wind energy.

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India has set out an ambitious target of generating 50% (500 GW) through renewable energy as part of its nationally determined contribution and OTEC (Ocean thermal energy conversion) offers significant potential for India, hence investment, research and development is the need of the hour to harness potential of vast ocean thermal energy.

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20. भारत में प्राकृतिक गैस हाइड्रेट्स की उपलब्धता का वर्णन करते हुए, उनके महत्व के साथ-साथ उनके अन्वेषण से जुड़ी चुनौतियों पर चर्चा कीजिए।

Bringing out the availability of natural gas hydrates in India, discuss the promise as well as the challenges associated with their exploration. (Answer in 250 words) 15

Gas hydrates are crystalline form of methane and water which exists in sediments.

Some of the areas are following.

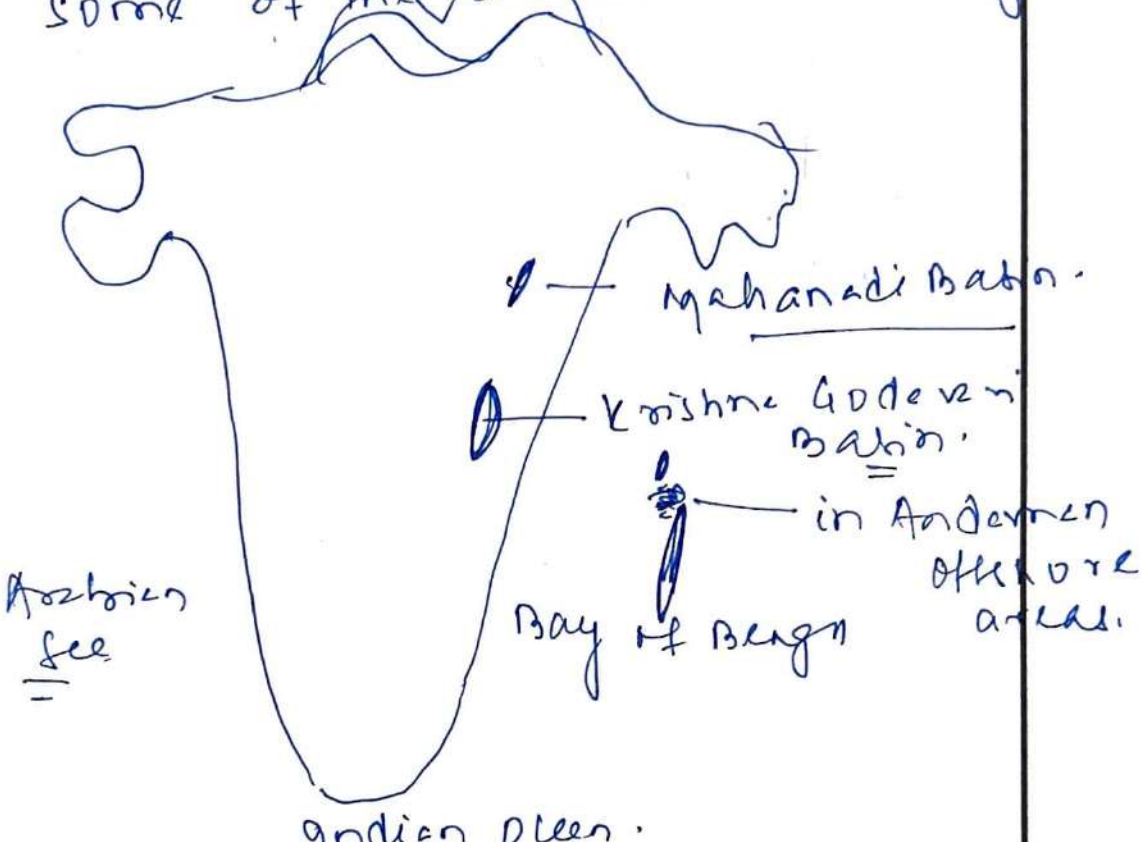

figure – Gas hydrates reserves in India.

The potential of gas hydrates

They can be a natural source of Gas which

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is less polluting.

(2) Dependence on other countries for gas imports would reduce saving in foreign exchange reserve as well as energy security.

(3) It can boost industrial and economic development by providing economic and ecofriendly fuel for the future.

(4) Gas hydrates can mitigate the challenge of global warming and climate change.

Challenges with exploration.

(1) High cost of exploration involved.

(2) Most of reserves are located in ecologically fragile areas which would lead to conflict of economics vs development

(3) Lack of investment by public and private sector.

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(4) Mining, piping, processing and transportation entails huge investment expenditure that can be a challenge.

India needs to find alternate energy sources to fuel its economic growth along with ensuring sustainability and the gas hydrates fit the bill right by being both economic and eco-friendly source of fuel, harnessing this technology should be top notch priority.